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GLEANINGS IN **BEE CULTURE** A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS. ILLUSTRATED SEMI-MONTHLY Published by THE A. B. J. CO. MEDINA, OHIO. \$1.00 PER YEAR

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No. 12.

STRAY STRAWS FROM DR. C. C. MILLER.

IS FAILURE to be our doom another year? June 4 white clover is in full bloom, but bees are doing nothing.

PLEASE KEEP WATCH, and tell us whether a queen prefers to lay in new or old comb; also, which the bees prefer to store in.

"GLEANER" gathers items "Among the Bee-papers" for *A. B. J.*, and, as might be expected, he gleans a good many gleanings from GLEANINGS.

"DO DUCKS eat bees?" is a question asked in *British B. J.* I don't know; but at one time in this country the bees were charged with eating ducks.

ADULTERATION of foundation is so bad that Prof. Foucart complains in *Le Progres Apicole* that nowadays he finds foundation that sags at 77° to 88° F.

EX-PRES. ABBOTT "roasts" ex-Secretary F. Benton, in *A. B. J.*, for not publishing report of St. Joe convention, after accepting \$25 in payment for his services.

THE THERMOMETER did not vary from 53° all winter in the cellar of O. E. Douglass, and his bees came out in splendid condition. But the cellar was well ventilated.

IN CUBA, according to H. G. Osborn, in *American Bee-keeper*, there are places where the honey is squeezed out and thrown away, the wax only being worth saving.

A NUMBER of cases, carefully observed by F. Goecken, showed young queens to be fecundated at from 8 to 10 days old, the first egg being laid 3 days later.—*Centralblatt*.

IN EAST AFRICA, says R. Ludwig, in Gravenhorst's *Illustrierte Bienenzeitung*, bees are kept chiefly for the sake of making out of the honey an intoxicating drink of disgusting taste.

I DON'T FEEL left out in the cold with my cellar stove so much as I did, since I know so good a man as H. R. Boardman is with me. Artifi-

cial heat may be a bad thing, but natural cold is worse.

TO MARK A HIVE temporarily, green grass or weeds will do nicely. It practically takes itself away, for next day it is withered, but a stone or block might be taken for a fresh mark the next day.

QUEENLESS COLONIES are often the result of a bee-keeper's handling. A queen is sometimes taken off with the cover, and once I found a queen on the hat of my assistant—a clipped queen too.

REV. E. T. ABBOTT, in *A. B. J.*, quotes Herbert Smith as saying that "particular parts of the body may become temporarily inoculated against insect stings." I wonder whether the inoculation is only local.

WOOD-BASE FOUNDATION reminds me of the foundation with tin-foil base that came out with a flourish years ago. It was a nice thing, only the bees would none of it. What have they said about the wood base?

"BUCKWHEAT, north of the latitude of North Carolina, may be a good forage-plant; but south it is perfectly unreliable. It will secrete an abundance of nectar only when the atmosphere is cool and moist. This is a condition we can not well have in the South."—Dr. J. P. H. Brown, in *A. B. J.*

DR. BROWN relates in *A. B. J.* that he gave goldenrod credit for being a good honey-plant, as bees worked on it more or less all day long, but afterward found that the honey stored came from aster that commenced yielding each day toward noon, and he concludes that goldenrod is a poor yielder with him.

I WAS SCARED a little when I got before such a big lot of railroad men in Chicago, but I found them a pretty nice lot. They seem to have hearts as well as other people. If a bee-keeper can be allowed to judge, I should put down J. T. Ripley, Chairman of Western Classification Committee, as a real gentleman.

LYSOL may prove to be the drug for foul brood, in Gravenhorst's opinion. It is cheap, and is more like crude than refined carbolic acid, and in his experience crude carbolic acid

has proved good as preventive and cure, while the refined article has been unsatisfactory. He thinks perhaps the coal tar that is in the crude, and also in lysol, may be important.

APIFUGE. In *Le Progres Apicole*, E. J. Roland recommends cantharides, or Spanish flies, and carbolic acid. Dissolve the powder in the acid, apply it to the skin, greatly diluted, and the bees won't sting there. Put the mixture full strength on a sponge and use it in a smoker if you want to drive bees out of a hive.

THE GREATEST GOOD to the greatest number would make a law that owners of cider-mills and such things should screen them against the intrusion of bees. If I am prevented by law from putting poisoned honey on my own ground to kill my neighbor's bees, equally I should be prevented from killing them with a cider-mill.

IF I HAD KNOWN Ernest was going to be under the weather I'd have tried hard to knock him out on the T-super question before he recovered his usual vigor. Guess I must try to fire off the few shots I have left, anyhow. [I am getting a little out from "under the weather," so you had better look a "leedle oud."]—ED.]

WHO CAN TELL what makes combs turn black as they grow old? It doesn't seem reasonable to believe the bees' feet do the coloring. [We know that bees go into the hive with dirty feet; and we know, too, that the cocoons and the deposits left from brood rearing seem to have a darkening effect upon newly built combs along the line where the brood was. Is it not probable that both causes contribute toward the darkening you speak of?—ED.]

"THE NORTH AMERICAN convention this year has received a special grant of \$100 from the Ontario Legislature, to defray the expenses at Toronto," says the *A. B. J.* Say; do you Canucks mean to own the convention? and will you reincorporate it? Joking aside, that's a grand stroke. [Yes, indeed that was a grand stroke; but our country is so large I am afraid we could not get similar favors at its hands—at least, not at present. I anticipate that the next North American will be the best in the history of the association. Those Canucks—beg pardon, Canadians—are hustlers in convention matters.—ED.]

YOU'RE 'WAY OFF in thinking Stray Straws for June 1 are reposing in my coat-tails. My wife has searched my pockets thoroughly; and when a woman can't find any thing in a man's pockets you may be sure there isn't any thing there. "Where are they, then?" I don't know. [I knew that you *once* carried Stray Straws in your pocket, and it was only when we punched you up just in time that we discovered their whereabouts. But you were then able to get them to us in time for the journal, so as not to break the chain. Yes, you are right. When a

woman can't find a thing in a man's pocket, no one can—not even the user of said pockets himself.—ED.]

WILL AS MUCH BROOD be produced in a two-story hive as if the combs are all in one story? is one of the conundrums in *A. B. J.* Opinions are pretty well divided, with some preponderance in favor of the single story; but most of the repliers seem not to answer from experience. [I have noticed sometimes that the repliers, when we had a similar department in our own journal, frequently gave an off-hand opinion, and not one based on experience. At the risk of doing something nearly as bad myself, I will say that, from what little experience I have had, bees breed better all in one story than in two separate ones.—ED.]



FEEDERS.

PROPERLY AND IMPROPERLY CONSTRUCTED;
THE LOSS INCURRED FROM POOR FEEDERS.

By H. R. Boardman.

Would bee-keepers be benefited by my experience with feeders if I should give it, or would they go all over the ground for themselves? is a question I have asked myself more than once. Although I am satisfied that not all will be disposed to accept my notions, some seed may fall on good ground.

Success in feeding depends almost wholly upon the feeders used. A large amount of the feeding done, even by quite practical bee-men, results only in injury to the bees, instead of benefit, leaving out of the account the cost. This is not a very encouraging compliment, I will admit; but it is too true. Feeders must be so constructed that the bees can not possibly get daubed with the feed. You may say this is easy enough. I once thought so too; but it is not so easy a thing to accomplish.

The most common kinds of feeders are those with floats or slots. Take any of this class of feeders, or even combs filled with feed, which would seem, certainly in the latter case at least, to meet the requirements of the bees, and watch them in their mad scramble to get each a share. At first, when only a few are feeding, they poise themselves daintily and sip leisurely and carefully as though their own fine plumes and feathers were their sole care. Soon they gather faster; and as their numbers increase they begin to hurry and jostle against and run over each other. Still they gather until they are piled up on each other in a wild, struggling, excited mass, which is not truly represented by any thing except the board of trade of some great city.

Now, those at the bottom, which were at first

so careful and dainty of themselves, are pressed and crushed down into the feed; and as each bee makes its escape up through the struggling mass with its well-earned load of sweets, it wipes its feet and wings and body off upon its neighbor's fine clothes, and they in turn rub it off upon others, and this process is kept up until the whole mass becomes smeared and dauby.

What then? As if ashamed to be seen by their friends at home in this deplorable plight, they go out and alight on a twig or leaf, or on the grass or fence, and commence scraping off the precious sweet they were so eager to get into a few moments before, and wipe it upon anything and every thing at hand. The loss of the feed thus wasted by being scattered around in almost imperceptible particles is a very serious loss to the bee-keeper when considered in the aggregate.

Nor is this the only serious part of the business. The whole apiary is thrown into a bedlam of commotion by the feed that has been so recklessly and profusely exposed by the daubed bees, and this is the explanation of how bees are so commonly excited to robbing and pilfering by feeding.

In my search after a feeder I have tried many—very many—of this class, and I could furnish now a rare collection of samples that have been consigned to the rubbish-gallery and to oblivion, that once were objects of great expectation. I had high hopes at one time in regard to open-air feeding, and I constructed an atmospheric feeder by inverting a can of feed on a slotted board. This worked admirably; but after feeding a few barrels of sugar in this way I abandoned the idea of open-air feeding, and used the feeders only for water in the dry part of the season. The objection to open-air feeding, according to my experience, was, the excitement caused too much waste of energy to make it profitable. The strong colonies, that had the least need of feed, got the lion's share. But the principle of this feeder I did not abandon. It became the stepping-stone and led to the atmospheric entrance-feeder, which has been already described and illustrated in this journal by the editor, and which is the only one I have ever been entirely satisfied with. In regard to it I will add to the brief description already given a few more words in detail.

I use a special wide-mouthed can holding two quarts, and not a common fruit-can, as described. I would not recommend any thing smaller. It would involve more labor in feeding. I have found these small enough. In using these feeders no feed need be exposed, either by the bees or the bee-keeper, to attract robbers. The feed is in sight, and the bee-keeper can see at a glance just what each colony is doing, and know just when the feed is out, without any examination. The feed is perfectly protected, and no harm can come to it from storms, even if it remains unused indefinitely. They are as near

being robber-proof as any feeder can be made. They are always in working order, but will not work without the assistance of the bees, even if left on all summer. Last summer I was feeding at one time 145 colonies in my home yard, and 60 more at my out-apiary.

HOW IT WAS DONE.

The cans were filled in the bee-house, from a tank, by a faucet, the caps adjusted, and placed in crates holding 12 to 14 cans. These were placed on a wheelbarrow, when ready to feed, two crates at a load, and wheeled out into the yard, and distributed by placing one on top of each hive. When all are thus distributed I pass rapidly along and invert each can in the feed-chamber, which has been previously adjusted to the hive. The bees are protected from injury in this chamber by an ample bee-space below the can when adjusted. I have filled these cans at all times, whenever they became empty, but prefer feeding at evening.

In feeding my out-apiary I took a sufficient number of these cases of filled feeders into my spring bee-wagon and drove to the apiary, with no slopping or spilling; thus the work of filling was all done at the bee-house at home, where the feed was prepared.

I prepare the feed by dissolving granulated sugar in water, nearly equal parts of each. I use hot water, but cold water will do, I am sure. Sugar syrup needs no doctoring for feed, excepting what the bees do themselves.

East Townsend, O.

[There are many things in favor of an entrance feeder, and such feeders would have been used more largely in the past but for the fact that none have been constructed hitherto but that would more or less invite the attention of robbers. But from what I saw in Mr. Boardman's yard during the robbing season last year, I am firmly of the opinion that he has solved the problem. Furthermore, his feeder may be used as a percolator, if desired, I think. Indeed, he almost admits as much when he says the sugar and water may be mixed half and half, the water cold; and even if the sugar did not all dissolve, more water could be put in at the next feed, and the bees would thus take care of the whole.—Ed.]

WAX.

ADULTERATION, AND HOW TO DETECT IT.

By Karl Rudolph Mathey.

The adulteration of wax is due mostly to its high price; and this is done as well with the natural yellow wax as with the bleached product. This adulteration is effected either by means of other fats such as tallow and stearine, and sebacic acid, or with vegetable fats and various kinds of vegetable wax; and lately with refined ozokerite (mineral wax, earth wax, or ceresin), and then rendered hard with certain solid substances. One may therefore safely conclude that adulteration of less than 30 or 40 per cent is seldom or never met, and some with

40 or 50 per cent, and some even very much more. In buying wax, therefore, it is necessary to be on one's guard; and it is always to be recommended that the specific gravity and the melting-point of wax be carefully determined when testing the quality of it.

The following is a test to determine whether foundation is made of pure wax. When, in making foundation, a mixture of beeswax and ceresin is encountered, the detection of the adulteration is a very simple matter—namely, by bleaching. As ceresin can not be bleached by the sun's rays, but must be bleached by the use of chemicals, foundation to which ceresin has been added will remain more or less of a yellow color when exposed to the light of the sun; while cells made of pure beeswax, if hung in the full light of the sun for a few days, and occasionally sprinkled with water, will become perfectly white.

ANOTHER TEST.

Melt a small piece of foundation in a vessel, being very careful not to burn it. At the same time, take a few tablespoonfuls of water and add thereto a little soda. Pour the melted wax into the soda water. After the mixture has been stirred for a while the wax will become perfectly soapy; if, however, ceresin was in the wax, the mixture does not become soapy, but swims on the surface like an oily mass.

It has been proven that many makers of foundation do not use the required amount of pure wax, but adulterate it with one-half or even two-thirds of ceresin*.

Material and shape must have especial attention in making foundation. In making it, only absolutely pure wax should be used. Any admixture of foreign substances debases the product. For the bee-keeper it is also of the greatest moment to be able to test the purity of his foundation before putting it into the hives. The most satisfactory conclusions in this matter give the specific gravity of pure beeswax as .966, and the melting-point at 143 to 146°. All adulterants, such as stearine, suet, ceresin, paraffine, mineral wax, spermaceti, etc., differ from each other in these two respects. Make a mixture of water and alcohol, of such density as will permit pure beeswax to float—that is, so it will not touch the bottom of the vessel nor yet come to the surface. Into this drop a piece of the foundation to be tested. This must maintain itself in the mixture at the same height the wax does.

Wax is found varying in color from white to black; and to the same degree the odor varies also, according to the plant from which the honey was mostly derived; hence when a bee-keeper compares the color and odor of Turkish, Indian, African, and other kinds of wax, with his own, he will nearly always make a mistake.

That foundation made of pure wax can be

stretched but slightly (if any) is entirely false. Pure wax expands in a warm temperature very noticeably. The resistance which wax offers to a direct pull, at the same temperature, varies within very narrow limits; hence it does not depend altogether on the country the wax came from, but on the season of the year, and even on the source from which it comes. It would take too long for one to examine all of its peculiarities. There are different kinds of entirely pure wax which would be quite unfit for foundation, as they lack the necessary toughness. Certain it is, that foundation of pure wax, whatever the color and smell may be, is always worked out by the bees willingly and rapidly.

WHAT IS CERESIN?

I take my answer from a pamphlet written by Fried. Thalmann, entitled "Fats and Oils."

"Under the name of earth wax, or ceresin, there has been put on the market within a short time, in large quantities, a product which has received the name of wax on account of certain physical peculiarities which it has in common with other kinds of wax. Earth wax is, however, a mineral substance, and is related to petroleum. Good clean mineral wax is easily mistaken for beeswax, and actually forms a large part of the 'wax' of which candles are made, and sometimes the entire part. When the price of beeswax is much higher than that of mineral wax, it is a gross deception to call a mixture of the two by the name of 'wax;' and this fraud can be detected only by careful experiment, determination of the melting-point, the specific gravity, and other peculiarities."

CERESIN FOUNDATION.

I reproduce the following, simply to show that foundation made from ceresin is publicly sold in Germany:

The undersigned firm offer ceresin foundation in their price list, together with that made from pure wax, on the following grounds:

1. The amount of beeswax produced, when compared with that of honey, is very insignificant, being scarcely 5 per cent of the latter.

2. The cheaper foundation made of ceresin, whether the extractor be used or not, and be the honey harvest never so good, is decidedly conducive to an increase in the net amount of honey produced as compared with the use of foundation made of pure beeswax.

3. The price of beeswax must fall more and more—that is, come nearer to that of ceresin, and that is only a question of time—or else the use of ceresin and other kinds of wax will become more and more common. But if it does become cheaper, then the use of ceresin for foundation will be discontinued.

4. No man, either officer of the law or a private citizen, can control or hinder any one of the thousands of bee-keepers of Austro-Hungary in the use of ceresin foundation, whenever and wherever he pleases, whether it be made by means of a plaster-Paris or wax mold.

BARON ROTHSCHUETZ.

Weixelburg, Austria.

[This article is interesting and valuable; but I feel sure no American manufacturer would think of making adulterated foundation.—Ed.]

* This certainly does not apply to this country.—Ed.

RAMBLE NO. 134.

BLOCKSBURGH.

By Rambler.

We divided our deer meat with our friend the blacksmith who had so kindly allowed us the use of his corral. He did not enthuse much, however, over deer meat. He said his boy could shoot one almost any day. Our blacksmith wielded his hammer, chewed plug tobacco, and discussed the tariff on wool, in his shop in Harris. When we passed through Harris we found the blacksmith's shop the only place of business there, and, of course, our smith was an important personage. We lifted our hats to him as we passed, and he returned our salutation by coming to the door and expectorating a quantity of tobacco-juice. He wiped his mustache with the back of his hand, and returned to the duty of pounding his anvil.

We rushed down some long steep grades, and made good time. Eel River, a fine mountain stream, we crossed here. Bro. Pryal wanted to stop and fish again. It was truly wonderful how the sight of a stream of water would stir up all of the piscatorial elements of his composition. We hastened across the long bridge; and Susan B., losing sight of us, set the whole valley vibrating with her neighing; and the series of bites Bro. Pryal wished so fondly to indulge in were lost. Our dog Jack was an object of sympathy these days. The hot sands of the road made him footsore; and on the long stretches of mountain travel, where we could find no water, he learned to look up to us for a drink from our canteen, and he became quite expert in the exercise of drinking from it.

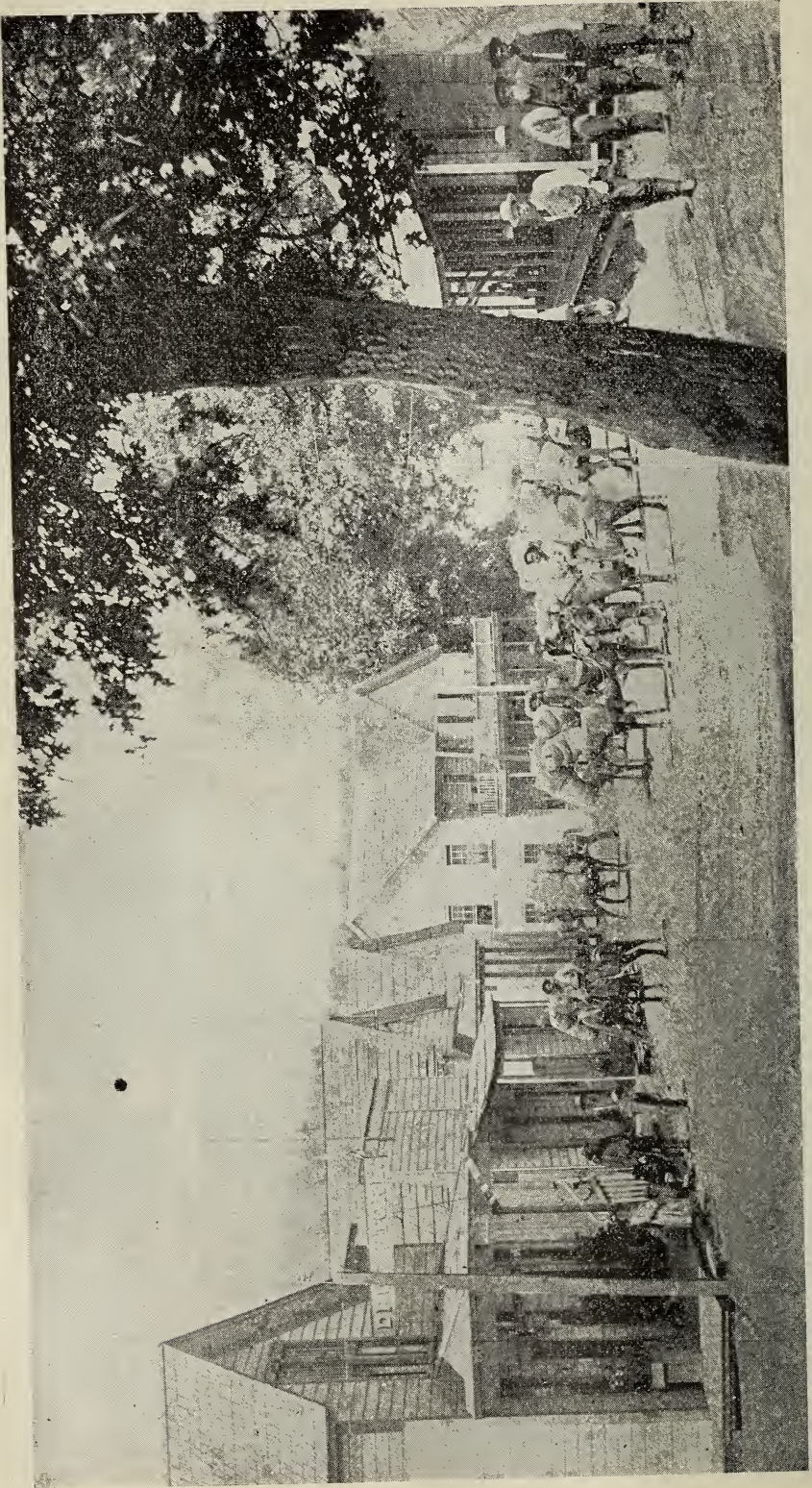
We made another forced drive after crossing Eel River, and after dark entered the little town of Blocksburgh. This time the shoemaker came to our rescue and provided a camp in the suburbs of the town, near a pure, sweet, cold-water spring, which fountain of water was the making of the town. Blocksburgh is a town of about 200 population. The residences are somewhat scattering, and located upon the spurs of several hills which converge here; and to get a view of the whole town one must needs get directly overhead. It was founded in this unique place by Mr. Blocksburgher, and all on account of being near that excellent spring. Mr. Block, as they all called him, for short, was a hale and hearty old man of about 75 summers, and occupied one of the leading stores of the place. For five years after the first establishment of the settlement, the only communication with the outside world was over a trail where every thing was packed in on the backs of mules. Another prime factor in the building of Blocksburgh, besides the spring, was its being the center of the wool industry. Over these mountains, and in the valleys, thousands

of sheep found succulent pasturage; and when wool was 40 cts. per lb., dollars were brought to the pockets of the sheep-herder; and the owner of a few thousand sheep in a few years realized a fortune. But of late, dull times had invaded these wilds, and the price of wool had subsided to less than 10 cts. per lb., and the industry was rapidly waning. Our visit to this wool country was just before the State election, and the politicians were much heated over the tariff problem; and tariff or no tariff on wool was their song, and the question is not settled even unto this day.

"There was a time," said Mr. Block, "when this store of mine was completely surrounded and nearly hidden from view with piles of sacked wool. It was brought in from the surrounding mountains, on mules, and the annual handling of wool amounted to the hundreds of thousands of dollars; and even now, when the price of wool is so depressed, the street presents a lively scene when a cavalcade of mules arrives with their immense burdens of wool," as will be seen by the photo. A large number of sheep-men came here in the earlier California days, and isolated themselves from civilization to a far greater extent than did ever a bee-keeper. These sheep-ranchers had much trouble with Indians, and Mr. B. said that, at one time, he could count up a hundred men who had been killed by the red man. Then there were saloon-rows that killed off a few more; "but," said he, "I believe there has not been a man killed here in a year."

The sheep-men finally sort o' compromised matters with the Indians by marrying their squaws, or, rather, taking them. Such were called squaw-men. Not a few were called men of the squaws, for they had taken a plurality; and the worst feature of this amalgamation of the races was that the squaw-men, many times without the least appearance of a troubled conscience, would leave their squaws and offspring to shift for themselves. The dusky wife had perhaps been a potent factor in making his fortune; but in his bettered worldly possessions he would move to town, build a new house, and marry a white woman.

We spent ten days in this town, and nearly every day some quaint character from the surrounding country would turn up. Here is an old man in from some branch of the Eel River, with a few boxes of fruit for sale. His apparel was ragged blue jeans; his toes protruded from an old pair of shoes; his hat was minus one half of its brim; his gray unkempt locks dangled over his shoulders; still this man could quote you scripture, Shakespeare, and Milton. He had been a man of books, and at one time had thoughts of the ministry. Even now it was said that he would make religious harangues to a crowd when opportunity offered. His hair he allowed to grow long, because in that he could imitate the lonely Nazarene;



THE WOOL MARKET IN THE STREETS OF BLOOMSBURGH.

but I noticed he did not imitate that personage in his clothing; for through several rents in his blouse I could see the bare hide of the man, showing the total absence of a shirt.

In him was fulfilled the idea of the poet when he exclaimed:

Sad is a man without a wife;
Sad is a ship without a sail;
But the saddest thing to me in life
Is a shirt without—its proper length.

What could be more sad in this case than the absence of the entire shirt, the sail, and the wife?

The shoemaker's boy said his housekeeping was off the same piece with his general make-

the hot sun in their then exposed position melted a few of them to destruction, and the rest were moved into the dense shade of the redwoods, and here in various places the hives were mounted upon platforms attached to the trees, six feet from the ground. Hogs and cattle roamed the forest; and to keep them from their depredations, the hives were thus elevated. The bees were not prospering in the shade, and they were to be moved out again. Of all trees to make a dense and cool shade, the redwood is the chief. Mr. Hope said that many bee-trees were found in these forests, and they were always well supplied with honey. His bees produced a good but dark honey. I pre-



CLIMAX ENG.
CLEVELD, O.

MR. HOPE'S APIARY.

up; that his cat would lick out the frying pan, and then curl up in it for a nap; and his bed—here the boy's mother cuffed his ears, and he went away disconsolate.

Now, a bee-keeper would never degenerate into such a state of bachelorhood as that.

As a relief to the above picture, and in sharp contrast, I will show you the home of the only bee-keeper of Blocksburgh. Mr. Hope. Mrs. Hope is a hale and stout English woman, and Mr. Hope and Mrs. Hope's son are the blacksmiths of Blocksburgh.

The smith, a mighty man is he,
With strong and sinewy hands;
And the muscles of his brawny arms
Are strong as iron bands.

With these brawny arms Mr. Hope had cleared away the crown of the hill, and upon it planted a pleasant home. The vine and the fruit-tree were growing with a vigor such as can be induced only by a virgin soil. In the rear, and toward the east, the noble redwoods formed a fitting background, while the mountains shade off into the distance. Mr. Hope had at one time about 20 colonies of bees; but

dict that it will be a long time before bee-keeping as a paying industry will be practiced in these backwoods.

THE BEST FORM OF HIVE.

FOOTNOTES: WHY THE LANGSTROTH FORM OF HIVE IS BETTER THAN THE CUBICAL; A REPLY TO FRIEND BOARDMAN'S ARTICLE ON PAGE 251.

By J. H. Markley.

Mr. Editor:—I see, on pp. 251, 252, you allow friend Boardman to go on in his comparison of the square and long form of hives, showing the advantages of the former over the latter, without so much as using your footnote on him. He admits, in the very beginning of his comparison, that "bees adjust themselves to a wide range of circumstances, and even to serious inconveniences, in the hive they sometimes occupy, without seeming to materially affect the result." Now, "*I am sure* that this furnishes proof" that we should subject them to these little "inconveniences" by an "economical form of hive" that will give the best results in the production of either of the forms

of our finished product. I am well satisfied (by actual observation) that many bee-keepers stumble on to some form of hive "by accident rather than the careful consideration" of *practical* results, and whimsically conform to its inconveniences so long that the greatest amount of success with another and more "economical" form will not induce them to shake off the spell.

Of course, the square hive "furnishes more nearly the natural requirements" than the long shallow form; but doesn't the straw hive, as he says, or, for that matter, the hollow tree, furnish that quality to a still greater extent over the cubical? It isn't the "natural requirements" we're after, as much as subjecting the bees to these little inconveniences on their part, for the sake of the greatest financial results?

ADVANTAGES OF THE SQUARE HIVE.

In regard to the holding capacity of the eight-frame hive not being large enough, why not use a ten-frame L. hive, which affords the same "economical form in construction," and which affords no more "surface exposure," than I can see, if we consider both the ends as well as the sides of combs; and it seems to me that end exposure is more objectionable than side. If a square hive is desired in order to obtain a more desirable height for manipulation, why not elevate the long shallow hive to suit the fancies of the operator—a position, by the way, that many desire on account of the ravages of vermin.

SQUARE VS. LONG HIVES FOR WINTERING.

In the square hive, "at the beginning of cold weather the brood will all be hatched." Just so in the long hive. "This will leave the lower part of the combs empty, upon which the bees will be clustered." That's the way they do it in the long hive. "The stores," he says, "will be above the bees, in the most favorable position to be protected and preserved by the heat ascending from the cluster." I don't know about that. I will see you later. Again, "As winter advances, the consumption of stores enlarges the brood-nest of empty combs, and the cluster advances slowly upon the stores above them." Say! hold on! Isn't it a fact that, but for the short warm spells during winter, that permit the bees to carry stores from any direction in the brood-nest to the center of the cluster, they would starve, the shape of the hive notwithstanding? Again, isn't it a fact that brood-rearing invariably commences in the center of the cluster where the outside honey is being carried? Speaking about dormant clusters moving on to the stores—why! dormant clusters are dormant—they don't move. If cold weather compels them to stay dormant long enough, the bees will "go up" while the temperature goes down. He says, "Stores of honey exposed for any considerable length of time to the cold become candied,"

etc. Now, the past winter I had honey granulate all around some clusters, I believe, by the heat generated by the bees evaporating the watery portion of the stores.

As space forbids a more minute criticism of friend B.'s article, I shall be content if allowed to enumerate a few of the many advantages of the long shallow hive, from my point of view.

ADVANTAGES OF THE LONG HIVE.

It is more shallow, hence less liable to blow over. It takes narrower boards in construction, and consequently is less apt to season-crack. Combs are less liable to break down by high temperature. I have seen dozens of hives with American frames, where every comb in some cases would collapse at a high temperature, but never one with shallow combs. Combs being shallow, they are easier removed from the hive—you don't need one side of the hive knocked out. Combs being shallower than in square hives, the bees enter the supers more readily. We all know that bees will work above quicker if a one-tier super is used instead of a double-tier, and still a shallow hive with *two* tiers of sections is but very little taller than friend B.'s; consequently it stands to reason that better results may be expected from a long shallow hive than a square one which, in consequence, is taller.

Carbondale, Kan.

[It is true, I made no answer to the article on page 251. Inasmuch as I knew our friend Boardman had more to say on the same subject, I decided to reserve my footnote until that time. Well, if you will turn to page 296, April 15, you will find my answer. But I do not like, as a rule, to "footnote" an article so hard as to spoil its force; indeed, I would never do it unless I thought the teachings were liable to do harm, or were founded on error. Mr. Boardman produces good arguments for his side, and to a great extent I should prefer to let them stand, so far as I am concerned. But suppose I had "footnoted" it so hard as to knock his arguments into smithereens, then there would have been no occasion for your writing the above valuable communication. If the editor tried to make every article lean his way, and break down the force of every article leaning the other way, his journal would be narrow, biased, and teach nothing but one-sided truth.—ED.]

LARGE HIVES.

THE LONG-IDEA HIVES.

By W. S. Hart.

Mr. Root:—I have just read Mr. J. A. Nash's article, on page 348, on "The Large or the Small Hive;" also the two that follow it, favoring the large hive, and I fully indorse the three in nearly every point on which they treat. As I have not followed this discussion of "Large vs. Small Hives" from the beginning, I will not attempt to enter it farther than to give my choice and a few facts and conclusions bearing on the matter, for fear of merely giv-

ing a repetition of what has already been published.

After many years of successful honey production I am fully convinced that, for the most profitable results, a large hive must be used, and this is especially true in the case of the production of extracted honey. Nor do I believe that this necessity is a local one to the extreme South, though possibly more marked here than further North.

In 1877 the writer was using a small hive of one cubic foot capacity, with (during the honey-flow) a half story top section over it. The outcome was a moderate yield of honey and a very large yield of swarms. As I then desired increase more than honey, the hive served my purpose exactly. Later, as my wish for a goodly number of colonies was being satisfied, my desire for a larger number of bees to the colony increased. I plainly saw that, in this direction, lay the accomplishment of my ultimate object, that of getting the greatest amount of honey with the least expense of money, time, and labor.

I made a lot of eight-frame L. hives, but found they did not give room enough for brood-rearing in the spring, so I left the top sections (the same size as the bottom sections, but supplied with but seven frames) on the year round, and put on extra ones during the honey-flow. This arrangement curtailed the swarming impulse to some extent, but there was a good deal of unnecessary work to be done, and the second-story combs had about as much brood and pollen in them as those of the body of the hive. I would occasionally find brood in every frame, except the outside ones, and, sometimes, some even in them in both stories. This left me no clean bright combs in the two-story hive for surplus honey, and no room for storing without a third story—a hand-to-mouth condition that I do not want in my apiary at any time. I concluded that there was little danger of getting hives too large, so I made ten-frame hives for L. frame, and with top sections on the year round, and used them side by side with the eight-frame hives for some years. Through what seemed to me indisputable proofs of their superiority, I was led to increase the number of the ten frame hives while the eight-frame hives have gradually found their way to the attic of my honey-house, where now all but one are nicely tiered up awaiting a purchaser in some one who prefers a small hive.

The reason I did not adopt a twelve-frame hive is, that they are too heavy for one man to handle. When Mr. Olaf Olson came to this country he asked my opinion as to the best size of hive, and I told him that, except for the awkwardness in handling, I preferred the twelve-frame. He made a few of that size, to test my conclusions, and from them secured some astonishing yields. I saw one of these

hives, three stories high, at his apiary, full from top to bottom of brood and honey. He told me that it had been extracted from but a few days before, and that it had been refilled as quickly as the smaller hives beside it. By actual weight this colony brought in 24 lbs. of mangrove honey in one day. There was no shenanigan about this colony. It was the progeny of one queen only, and had no special care over and above the others about it. One only, I believe, of our most successful apiarists of this section uses the eight-frame hive, and he tiers them up high to get the necessary room. If bee-keeping were my specialty, and my ambition required that I make an astounding record of a great honey-yield with least labor, a "Long Idea" hive, taking 16 frames, and a division-board, with a regular ten-frame top section, supplied with 9 L. frames to put over it during the summer honey-flow, would fit my wants nearer than any thing else that I now think of. Other matters claiming my attention, however, and the proposed change being an expensive one, I manage to be reasonably content with last season's record of 554 $\frac{1}{4}$ lbs. from one colony, and an average, on 116 colonies, of 354 lbs. per colony from two story ten-frame Langstroth hives with nine frames in the top section.

The freezes of last winter have so changed the conditions here that it will be two or three years before we can reasonably hope for another large yield of mangrove honey.

Hawks Park, Fla., May 25.

EIGHT FRAMES NOT ENOUGH FOR SOME QUEENS.

HOW EXTRA ROOM IS SUPPLIED AT DR. MILLER'S.

By Emma Wilson.

We have decided most emphatically that eight frames are not enough for some of our queens, as some of our strongest colonies have ten and eleven frames of brood. In the spring, as soon as a colony gets pretty strong, say with about five frames of brood, we put an extra story of brood combs under the colony. We have two objects in view in doing this. First, if the queen feels crowded and wants more room, she can enlarge the brood-nest at her pleasure. Second, the combs are nicely taken care of by the bees, and, if not needed, no harm is done.

Last year the weather was delightfully warm; and in some cases, where the colonies needed more room, we placed the extra story on top, as that was less work than putting it under, and in a few cases put a frame of brood in the upper story to induce the queen to go up sooner. Shortly afterward we had a cold snap; and the consequence was, the bees had a bigger contract on hand than they could care for. It makes a big difference whether the empty space

is above or below the brood-chamber. In every case where the empty story had been put under, the cold snap had not seemed to affect them much, while those that had the empty story put on top had not increased in brood, and in some cases had less brood than when the extra story was given.

This year we profited by our former experience, and all extra stories were placed under the brood-nest, although up to May 12 it was the warmest spring on record. After that we had some extremely hard freezes, with about two weeks of cold weather.

I spoke of giving extra stories, but it is not the intention to leave them on during the honey-harvest. They will be taken away when we put on supers, with the exception of a few which may be left on for experiment. We have also put a few colonies in 11-frame hives for experiment.

We hoped that, by giving our strong colonies that extra story of combs under, it would do away with the swarming fever; but I am sorry to say I can not see that it makes much difference. Nearly always we find queen-cells in these colonies first, not because of the extra stories, but because they are the strongest colonies. Now, we know that the Dadants have little or no swarming because they use large hives and give the queen plenty of room. What's the trouble with our colonies? Are not 16 frames enough for the queen? That's more room than the Dadants give. Is it because they are in two stories? The queen seems to go readily from one story to another, and we find five and six frames of brood in each story, and queen-cells started. What's the trouble?

Why do our queens behave so differently from Mr. Hatch's? He finds difficulty in getting his queens to return to the lower story after going up, although the lower story is filled with bees and brood, while our queens go down of their own accord into a story of dry empty brood-combs.

As I said in last number, our feeding this spring has not been a very great success so far, as the bees have been so slow about taking it. In two or three cases the feed turned to vinegar on the hives. If that feed had been placed a distance from the hive, and those same bees had had a chance to get at it, I think they would have taken it eagerly, as they were promptly on hand in any case of outside leakage. I wonder what makes the difference. Do they think it's all right as long as it's in the feeder over the brood-nest, and theirs to be taken at their leisure, and they must hustle if they get their share when it's away from the hive? It looks like it, if we may judge from their actions.

They are doing better about taking it, now that fruit-bloom is gone, and dandelions nearly so.

Marengo, Ill.



TWO QUEENS WITH A SWARM.

Question.—Does a colony of bees ever have two queens? I hived a swarm of bees the other day that had two queens, I am pretty sure. My neighbor tells me it was two swarms, as he says there is never more than one queen in a colony.

Answer.—Probably both you and your neighbor may be right in this case, but you have got things a little mixed. I think such a thing was never known as a prime swarm of bees coming from a colony in a normal condition, having two queens with it. To be sure, we do sometimes have two laying queens in a hive at the same time, although such is a rare exception; but no colony was ever known to swarm at such a time, and both of these laying queens go with the swarm. With a prime swarm, or what is often erroneously called a first swarm, there always accompanies it a laying queen. All swarms having a young or virgin queen should be classed as after-swarms. When a prime swarm issues it generally leaves maturing queen-cells in the old hive, from which, when hatched, the young queens lead out all after-swarms. The only exception to this is that hinted at above, where, from some cause, the old queen dies near the swarming season, when several queen-cells will be formed on the brood left, so that young queens may lead out what appears to be a prime swarm, the same as they do after-swarms. For convenience, all swarms except the one having the old or laying queen are called after-swarms by bee-keepers, so the readers may know what the term "after-swarms" means. Some days after the prime swarm has issued, the first young queen emerges from the cell; and if after-swarming is considered to be best, in the economy of the hive, the other young queens are kept in their cells by a little knot of bees clustering on them at all times, so the lid of the cell can not be removed to let the queen out, her majesty being fed all the time through an aperture in the royal cell. If further swarming is not considered "economy" by the bees, then all the other queen-cells are torn down and the young queens destroyed, so that the first hatched is the only queen in the hive. If the cells are protected as above, the first-hatched queen seems to get into a rage, and utters shrill notes at intervals, called the "piping of the queen," which is kept up for about two days, when the second swarm, or first of the after-swarms, issues. This piping of the queen is always heard, if listened for, before all after-swarms, or in any case of a plurality of queens in a hive intending to send out a swarm. The queens kept back in their cells by the bees are growing in age and strength, the same as is the one which is out, they telling of this by their trying to pipe the

same as the one does that has her liberty, which noise is termed "quahking;" and so it happens that, during the hurry and bustle of the second swarming, one or two of these queens hastily finishes biting the cover off the cell and gets out with the swarm, in which case two or more are found with the swarm, as in the case of our querist, although it is a rare thing to see more than two or three queens with a second swarm. If a third swarm is to issue, the bees now cluster about the remaining unhatched queen-cells as before, keeping all queens prisoners except one, which queen scolds or pipes away, as did the one before, the others in the cells showing their anger back again by a chorus of quahkings immediately after the first ceases piping, when, after the lapse of two days or such a matter, the third swarm issues. As there are fewer bees at this issue than there were before, and more mature queens held as prisoners, the queen-cells are quite generally vacated by the guard-bees; and queens, bees, and all rush out, and in such cases I have counted as many as from 12 to 20 queens with one such swarm, though from one to five is the usual number. In the above I have tried to give a short insight into the mysteries of the swarming of bees, many points of which do not seem to be fully understood, even by those who have kept bees for ten years.

WHICH WAY SHOULD HIVES FACE?

Question.—Should a hive face north or south? Would east or west be preferable to either?

Answer.—Nearly all bee-keepers agree that a hive should never face north of an east-and-west line, the majority favoring a southerly direction. The reason given for this is, that the morning sun entices the bees out to work earlier in the day, while a northern exposure keeps them in later, and in winter is almost sure to result in the loss of the colony in northern latitudes, from our rigorous north winds blowing in at the entrance, and the confinement of the bees, caused by the entrance being in the shade on mild, sunshiny days, when the bees in hives facing south fly freely. In southern latitudes it might not make much difference which way hives face; still, I have the impression that even in Florida and Texas the most of the hives are faced as above.

SHADE FOR HIVES.

Question.—Is it best to have a roof over the hives proper, or have them under trees for the purpose of shade?

Answer.—Some of our best bee-keepers use a shade-board made of lath or light lumber to shade the hive during the hot summer months; but if the locality is at all windy, a weight of some kind must be used to keep the wind from blowing them away. This weight is generally a 15 to 25 lb. stone, which adds very much to the labors of the bee-keeper, as it must be lifted off and on every time the hive is manipulated. Shade-trees (not very dense) are always good, not only for the bees, but they add much to the

comfort of the bee-keeper; but it often so happens that not every desirable spot for locating an apiary has such trees upon it. After having tried all kinds of shade I now prefer to paint the hives white and let them stand in the sun, where there is no danger of the cover leaking. White has a tendency to reflect the heat rather than absorb it; hence any thing painted white does not become nearly as hot as do the dark colors, so the bees in white hives remain comfortable at times when those in dark hives are driven out by the heat.

DEATH OF MRS. O. O. POPPLETON.

The following letter tells us the particulars of this sad event:

Friend Root:—I have just received very sad news from friend Poppleton. His dear wife Mattie died, after a short illness of less than a week. He writes me that they did not have any idea the sickness would be fatal until three hours before she passed away. She was taken down with a complication of diseases, but the final cause of death was heart failure.

Mrs. Poppleton was a native of Indiana, having been born in Maysville about 41 years ago. She will no doubt be remembered by a number of bee-keepers, having attended the national convention at Cincinnati in 1882, and Toronto in 1883, besides other State conventions. She was a well-posted and enthusiastic bee keeper; and ever since her marriage to friend Poppleton she has been his first assistant in the practical care of the apiary.

Mrs. Poppleton has been a consistent and prominent church-member for thirty-one years, having joined the Methodist Church when ten years old. Cheerful, kind-hearted, and a lady in every sense of the word, to know her was to value her highly; and in her death, the community in which she lived sustains a heavy loss. While the few who were privileged to class themselves among her intimate friends will feel their loss deeply, I know how much friend Poppleton needs their sympathy in his great bereavement.

H. W. MITCHELL.
Hawks Park, Fla., June 4.

[Our readers will recollect that Constance and myself spent several days at the home of friend Poppleton. Very soon after my arrival I was deeply impressed with the bright Christian faith and hope that continually shone forth from every look, word, and action of our departed sister. The Bible was her constant companion and friend; and when writing some of my notes for GLEANINGS, if I wanted a scripture text she gave it with remarkable readiness, showing herself almost a living commentary on the sacred pages. It was especially at that Sunday-school I have told you about that I was impressed with the thought that Mrs. P. was a spiritual guide and sheet-anchor in that little community. Our friend Harry Mitchell has got it right, where he says the little flock there has sustained a heavy loss. I often think of that little new Congregational church, and of the little flock that gathers there each Sabbath. I believe they have preaching service only every other week, and this throws an additional responsibility on the little Sunday-school that is kept up on the Sundays when there is no preaching. May the great Father above sustain and cheer up our afflicted brother in his great bereavement. The dear wife was to a most remarkable extent his companion and helpmeet—not only in joy and sorrow, but through all his daily tasks. She went with him on his pleasure-trips, helped to manage the boat, and seemed to be in reality a part of his very self. May God give him grace to feel that she is his friend and companion still, even though she has stepped on, for the time being, a little before him.—A. I. R.]

TRADE NOTES.

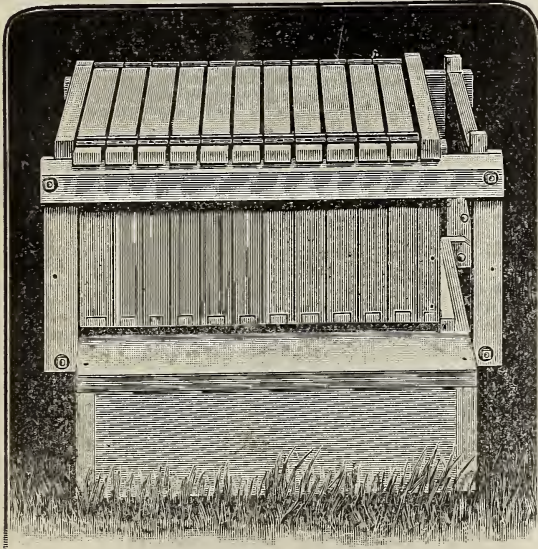
THE ASPINWALL HIVE.

By F. L. Thompson.

One logical inference from the large and small hive discussion is, that any hive which can not be contracted or expanded frame by frame up to the maximum, without fussing with division-boards or dummies, is imperfect.

Two sizes of the Aspinwall hive are made—one holding 1 to 11 standard frames, the other 1 to 11 deeper ($17\frac{5}{8} \times 11\frac{3}{4}$) frames, or a $1\frac{1}{4}$ to nearly 14 L. frame capacity. I prefer the latter, as it fulfills the condition of perfect elasticity, while preserving the standard length. I see by the *Review*, however, that Mr. Aspinwall is not a supporter of large capacity *per se*. The original reason for the expansiveness of the hive seems to have been to make room for the introduction, between eight brood-combs, of non-swarmer wooden dummy combs, half an inch in thickness, with cells open at both ends. These are still on trial, but promise much.

The left side (on the right in the figure) is a cleated $\frac{3}{8}$ -inch board, which, besides forming



THE ASPINWALL HIVE.

one wall of the hive, also performs the functions of a follower. Being perfectly free from the hive, it is as easily handled as a frame, and is suspended in the same way. This freedom is secured by making the essential and fixed part of the hive-body consist of a framework, mainly of oak, bolted together. The remainder of the hive, except the frames, is poplar.

The front is open. The closed-end frames take up the whole space. The advantage of this arrangement will be seen by the following quotation from Hutchinson's *Advanced Bee-*

keeping, under "Shade for Bees," "A colony of bees is a living, heat-producing body, and can be kept cool in the same manner that we keep our bodies cool; viz., let its clothing (hive) be thin, with a free circulation of air." This unpainted $\frac{3}{8}$ -inch front doubtless also facilitates the insensible evaporation of moisture. The rear of the frames also forms a $\frac{3}{8}$ -inch wall, separated by a bee-space from the back, which is a $\frac{5}{16}$ -inch board, bolted on with iron cleats. The permanent side, and the bottom-board, are of $\frac{3}{8}$ -inch lumber. A further aid to coolness is afforded by a space left under the removable side, closed by a strip when not in use. This accomplishes the same result as wedging up the hive, in a much easier manner. It is also handy in hiving swarms.

The bottom-board is fixed. If other things were equal, I would choose a loose one. But I prefer this hive with a fixed bottom to the next best with a loose one, especially as the fixed bottom has some undeniable advantages of its own. This bottom is easily cleaned, the front and side being open. I doubt, however, whether the fixed bottom may be regarded as an essential characteristic of the Aspinwall hive, unless so desired by the powers that be.

Simple castings, fastened by a screw near each end of the top-bars, complete the circuit of a bee-space elevation of the top edge above the frames; secure correct longitudinal spacing, and, in connection with the closed ends, prevent the bees from contact with the frame-shoulders, which thus remain unpropolized. These shoulders rest on a beveled railing which forms part of the framework, making an ideal method of getting at the frames, without introducing the fingers among crawling bees or dauby propolis. This feature also removes the most serious objection to the use of wide top-bars, which are usually hard to get hold of. The frames being spaced $1\frac{1}{2}$ inches, the top-bars are $1\frac{1}{4}$ inches wide and $\frac{3}{8}$ inch deep, which dimensions are best to avoid burr-combs.

The frames are held firmly together by a blunt screw turning in the side piece of the framework. Two blocks, the three dimensions of which are respectively equal to the width of one, two, and three frames, make the ordinary adjustment by their different positions between the screw and the movable side.

Closed-end frames, accurately made and held together so as to present a smooth surface to the bees, are easy to handle, and have several advantages of their own, of which, perhaps, the most important is that, in wintering and breeding up in the spring, the heat of the cluster is confined to the comb-spaces which it occupies.

The Aspinwall frames have two advantages

of hanging frames which ordinary closed end frames do not—no bees can be crushed under or back of the frame-ends, and the lateral play is considerable, amounting to about $1\frac{1}{2}$ inches.

Every one has noticed, in brood-chambers which are not extracted from, that a hillock of honey on one comb sometimes collides with

fore and behind, and the hive-stand below, made provision for a nearly continuous envelope of packing on all six sides, between two and three inches in thickness. The results were satisfactory. In the spring, frames were as easily got at for inspection as in summer, without disturbing the packing.

I did not have an Aspinwall super last summer, but have just filled one with sections to see how it works. I find it can be filled as fast as or faster than a T super. The cut shows the principle. Two sides, the rods connecting them, and the separators, are all there is of the super. The separators are turned to a right angle at the bottom, and have insets corresponding to those in the sections. The distinctive feature, which makes possible this simplicity, is the four round sticks which are used when the super is being filled, and afterward withdrawn. These pass through holes in the ends of the side-boards, and keep the sections to their proper place lengthwise until screwed up by the thumb-screws on the rods, while giving ample play for inserting the fourth section in each row. When the sections are all in, they can be temporarily wedged at the ends with a strip of the proper thickness, to keep them square until fastened. A flat board is then laid on top, to which a

little pressure is applied, and the thumbscrews are tightened. On removing the board, sticks, and wedge, the result is a homogeneous and smooth block of sections, which is conducive to cleanliness, as I can testify from having used another super in which the same result is achieved in a different manner. The sections can be scraped in a body, before being removed from the super. This super admits of contraction or expansion just as much as the hive.

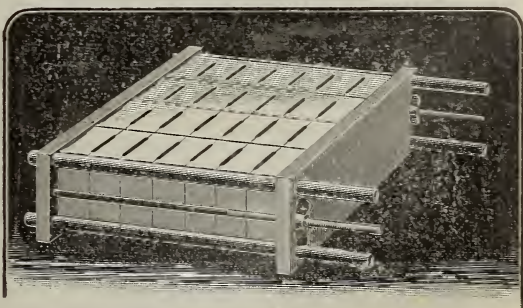
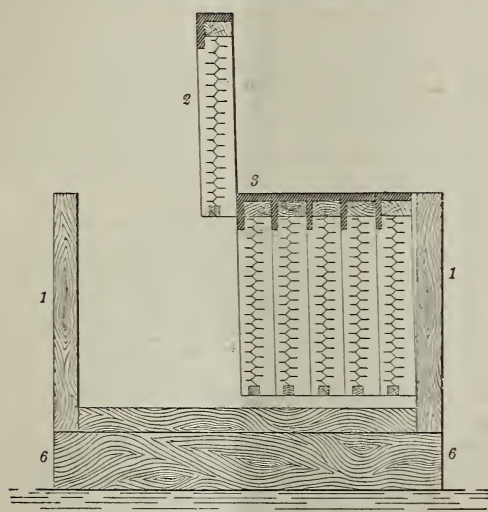
The flat or the Higginsville cover may be used on this hive as on any other, and it will

another on the next one, if the frame is drawn directly out or replaced without stopping to move the other frames aside. A closed-end frame is replaced by sliding its edges down past the edges of the next one, so as to avoid catching bees between. The figure shows how this is done in the Aspinwall hive, without any collision. The offsets on the sides of the hive, against which the last frames impinge, slant a little from the perpendicular, so that, when the hive is leveled and the frames screwed up, each frame slants; consequently the septum of the comb is a little nearer one side at the top, and a little nearer the other side at the bottom (the top and bottom bars being placed to correspond). Hence when one frame commences to slide past another, the parts of the combs which are then opposite are farther apart than when down, and the normal distance between them is attained only when the frame is completely down.

In manipulating the frames of an Aspinwall hive last summer I was always able to hold each frame close up against the next one when sliding it down, though occupied by a strong swarm, which put plenty of honey in the tops.

For wintering and spring protection I have had experience with but one of their devices. I believe there are several. In this, external attachments on the front and rear, internal ones on the sides, a tray above projecting be-

take any style of super. But if the Aspinwall super is used, a deep cover is necessary; and, after all is said and done, nothing is more thoroughly satisfactory than the old reliable cap, covered with tin. Rain and snow can never beat under it; and when, as in this case, it is deep enough to accommodate two section-



supers, thereby keeping the sections warm in cool nights by adding an internal arrangement to suit the taste of the individual, and has plenty of play, and does not need a stone to weight it down, and is never proplized, it can hardly be called "impractical."

I have no interest in the sale of this hive, but have written the above to call the attention of bee-keepers to new and practical ideas.

Arvada, Colo.

□ [Some time ago an enthusiastic admirer of the Aspinwall hive (advertised in these columns for a number of issues back) wanted to know why we did not have that hive illustrated in our department of Trade Notes. I had intended previously to have this done, but somehow I had not got around to it until my attention was called to it. I wrote to the Aspinwall Manufacturing Co., asking them, if they saw fit, to send a description, accompanied by engravings, or request one of the users of their hives to do so. As will be seen by the above, they acted on the latter suggestion. There are some features about the hive I admire; and although not having tried the same I am of the opinion that it will work very nicely. Not every bee-keeper will be pleased with the same kind of hive; and I am very glad that we can give our readers a fair and impartial view of several good hives.

Perhaps it would be well to say that hives that are made up in part of the end-bars of the frames have never been very popular. Most bee-keepers seem to prefer some sort of box or shell in which to put the frames. However, two of the largest bee-keepers in the world (Elwood and Hetherington) use closed-end frames without the protecting case during the summer, each side being closed up by a panel, something as shown in the Aspinwall hive above. The Aspinwall system employs the plan used by Quinby and Hetherington; but instead of using standing closed-end frames it used closed-end hanging. —ED.]



J. P., Mass.—You can put bees into a newly painted hive as soon as the paint is dry. Paint is not offensive to bees; in fact, about every two years we paint all our hives while the bees are in them.

H. F. S., Pa.—The Dovetailed hive—in fact, all hives of modern construction—have plain, square edges. There is no danger of supers and covers blowing off, because the bees will fasten them on with propolis. Neither will the rain beat in, and rot the edges that come in contact, as would at first appear. Beveled edges between parts of hives and telescopic joints have been largely abandoned.

F. C., Mich.—Noticing our advice in the A B C, to have hives face toward the east, says the hives he has facing that way have not done nearly as well as those facing in other directions. The directions we gave in the A B C book are general, and apply to most localities. If your prevailing winds are from the east,

then, of course, it is not advisable to have your hives point that way.



With the exception of the small trees, basswood seems to be profusely loaded with buds that will soon burst into blossoms. If these blossoms shall, later on, burst forth with dead loads of honey, the hearts of bee-keepers will be glad, in view of the fact that clover promises but little.

ALTHOUGH there has been very little honey coming in, our bees have swarmed earlier than usual. They swarmed out, notwithstanding there is plenty of room for the queens, and for the bees to store honey. The only reason the apiarist and I can assign for this is the extremely hot weather that made the bees think other quarters might be more desirable.

In the *Am. Bee Journal* Mr. G. W. McGuire, of Dark Ridge, N. C., comes out vigorously in favor of large brood-chambers, he having used them from 600 square inches up to 2172. The colony in that hive filled it in 16 days, and gave a surplus of 63 one-pound sections. The next spring he bought four colonies in small hives, and they did nothing but swarm, while this big colony gave 110 lbs. of surplus. He claims that so much honey in the brood-chamber is of priceless value to the bees. June 2, 1893, one of these colonies gathered 22 lbs. from poplar. Mr. M. claims to have one of the best honey localities in the world—poplar and basswood. It seems likely that Western North Carolina will not much longer remain the *terra incognita* it has always been, as it is doubtless one of the richest and most healthful parts of the United States.

BRO. HUTCHINSON has reason to be proud of the two articles in the *Cosmopolitan*, especially over the very fine photos from which the engravings were made. The two articles are written for the *general* public, and I hope that some time they may be incorporated in book form for general distribution. One very pleasant thing about it is, that the treatment of the subject is fair and impartial. It does not boom any particular hive, but simply talks *standard* fixtures and *accepted* opinions, leaving all the latest ideas and theories out. Mr. Hutchinson deserves a vote of thanks from the bee-keeping world for the masterly way he has given the general public *correct* information. I think there will be less talk about manufactured honey because it has been shown that hundreds of tons of pure honey can be produced right from the hive—all of it gathered by the bee.

BEES ON STRAWBERRIES.

In the *Amer. Bee Journal* is an article from Hon. Eugene Secor, relative to the value of the strawberry as a honey-plant. It seems that, in a previous number of that journal, Mr. E. T. Abbott had claimed that bees visit strawberry-plants in considerable numbers; but in the present number Mr. Secor quotes from a letter written by Wm. Kimble, of DeWitt, Ia., a man who raises berries by the acre and honey by the ton. He says, "It is a fact that bees never work on strawberries. I wish they did." Among others who write in the same way as to the utter uselessness of strawberry-blossoms for honey are W. S. Fultz, Muscatine, Ia.; G. M. Doolittle, and Dr. C. C. Miller. But when we consider what they do produce, we can easily excuse them for not giving honey too.

DO WE WANT THE *APIS DORSATA*?

In our previous issue appears a petition having in view the importation of the *Apis dorsata*, from India. The editor of the *American Bee Journal* does not seem to "tumble" to the idea, believing that, if the government has any money to expend in that way, it would be better if applied in developing the known good races we have. Another writer thinks such bees could not be domesticated in a cold climate, and that they would not take kindly to hives, and they would not breed with our common kinds. He fears, furthermore, that, even if successfully introduced, they might increase so as to utterly run out the smaller bees, just as the miserable English sparrow has encroached so much on our useful birds—giving us in his own person nothing pretty, good to eat, nor pleasant to listen to. If my own enthusiasm for the *Apis dorsata* is not up to the boiling-point it is because I do not think it would pay for the trouble, even though they might not prove to be a nuisance.

SHALL WE MERGE THE BEE-KEEPERS' UNION AND THE NORTH AMERICAN INTO ONE SOCIETY?

In the last number of the *Review*, Bro. Hutchinson hits a big nail square on the head in regard to the necessity and desirability of bringing about better organization among bee-keepers in this country and Canada. The plan is, at least in the rough, to have all the smaller local organizations auxiliary to the State society, and then in turn have all the State societies auxiliary to the (or a) national organization—or better, perhaps, a continental union. In an able editorial on this subject the editor says:

For these reasons I think it would be better if the North American and the Bee-keepers' Union were merged into one society. As it now is, the members and officers of the Union never hold any meetings. All discussions are made either in the journals or by mail, and all voting is done by mail. To the plan of voting by mail, I see no objections; but I do think it would be an advantage if the officers and leading members, or as many as wish to attend, could meet

in convention once a year and discuss ways and means face to face. When there was a change made in its constitution three years ago, the subject was first discussed in the journals, then continued in a meeting of the North American where certain changes were recommended and finally adopted by the Union, a decision being arrived at by means of a vote made by mail.

And again:

There are many things, aside from those already done by the Union and North American, that might be done by such an organization with an efficient executive officer at its head and money in its treasury. The feature mentioned by Mr. Case is a case in point; viz., that of looking after and reporting swindlers. I don't know that the constitution of the present Union would need any change to allow of such work being done. Two or three times the *Review* has exposed some swindler; but this was not done until numerous complaints had been received, and considerable time had elapsed. To call a man a swindler because one man said so would often lead to unjust accusations. When an apparently just complaint is made, the Union could make a thorough investigation—more thorough than one man could afford to make.

I have long thought it would be a good idea to merge the Union and the North American into one society; and I am glad that Brother Hutchinson has set the ball a rolling. Then the North American could offer substantial advantages for becoming members of the same. While it would have its annual meetings as before, the fraternal handshakes, etc., the members would be entitled to protection from unjust legislation, and perhaps from swindles of all kinds. I do not know that I am prepared to say just yet that such a merging of the two societies would be wise; but I think the matter should have the earnest and careful consideration of bee-keepers. It is a good time now to discuss it, preparatory to the meeting that is to be held in Toronto.

THE CLOVER-MIDGE; ITS WORK UPON THE RED CLOVERS.

The clover-midge seems to be making serious havoc in this locality, at least on red clover. As I go out on my trips in the fields for pleasure and health, I find that fields of red clover look as if they had been literally riddled with shot. The leaves are perforated with holes anywhere from a sixteenth to a quarter of an inch in size. In every field this clover seems to be similarly affected. On top of this is the drouth; and the consequence is, the usual rank-growing pea-vine clovers look poor and feeble compared to what they ought to appear at this time of year. But I have not yet so far noticed that the midge has attacked the white or al-sike clovers. Why they appear to be proof against this pest I do not know. This surely is fortunate for bee-keepers, because the large bulk of clover honey comes from these white varieties. I believe it is generally admitted by writers on agricultural subjects that the white clover seems to be proof against the midge. I

should like to hear from our readers, especially Prof. Cook, who may be able to give us more definite information on the subject.

THE HIVE DISCUSSION.

ALTHOUGH the hive discussion that has been going on in our columns may be a little confusing, from the fact that one side very able defends the eight-frame side, and the other just as ably shows advantages in favor of 10, 12, or even 16 frames, I think light is surely coming if not already here. Perhaps this discussion may be tiresome to some; but it seems to me it ought not to be stopped yet, although we have prolonged it longer than at first anticipated. The proper solution of the question for each individual means dollars and dollars. I see no way but that each one must weigh the arguments advanced by both sides, and then consider his own *locality*. I will say this much, that the defenders of large hives have shown a stronger following than any of us had any idea of; and it is evident, too, that there is a tendency toward the large sizes in some places. As for ourselves—that is, we here at the Home of the Honey-bees—we shall have to see stronger proof yet to induce us to change to a larger hive, although we shall be experimenting, and shall hold ourselves open to intelligent conviction. I think that, in the majority of the localities, the eight-frame hive is still the best. We shall have something pertinent on the subject in our next issue by J. E. Hand.

FIVE-BANDERS; THE TIDE TURNED AGAINST THEM; PROMINENT QUEEN-BREEDERS ARE GIVING UP THE BREEDING OF THEM.

We have several letters from prominent queen-breeders all over the country, condemning the five-banded bees on the grounds that they are short-lived, not good at wintering, are bad stingers, excessive breeders, etc. I am sorry I am not at liberty to give you their names; but one or two of them will probably have something to say about what they think of them, over their own signatures, in an early issue of GLEANINGS. I noticed in the last *Progressive Bee keeper* an article by E. T. Flanagan, with the headline reading, "The Five-banders are no good as Honey-gatherers." Mr. F. says:

If the advocates of the so-called five-banded bees could have been with me when I overhauled my bees this spring and noted the condition they were in as compared with the leather-colored Italians and first cross hybrids, they would never advocate their dissemination or propagation again. With exactly the same conditions as to hives, locality, treatment, amount of stores, and condition throughout the season, all were as like as possible; but in every case this spring the dark Italians and hybrids were found in good, fair condition, with no loss, scarcely, whatever, while the five-banders were reduced to mere nuclei, or were entirely dead, leaving plenty of honey (sometimes as much as twenty-five pounds) in the hives. Friend Alley, in his denunciation of them, has been fully vindicated if others' experi-

ence tallies with mine, and I judge it does from the reports in the bee-journals that have come to hand.

At the end of the last season we introduced a good many five-banders into our yard. Of the four or five colonies that we lost in wintering, three of them were of the yellow sort. They were such bad stingers all through the summer that I made a firm resolve that, unless they improved very greatly, we would go back to the leather-colored Italians, and now we have hardly any thing else in the yard. Last season it was hardly safe to work among the bees, without a veil. This year the situation is materially modified.

I am well aware that GLEANINGS has, in the past, said some unpleasant things of the five-banders. It was one of the first to raise its voice against them; and now I am not surprised that the whole bee-keeping world is going back on them. The whole trouble is, that queen-breeders, rushed with orders, did not take sufficient pains to breed for their bread-and-butter qualities as well as for color; and the consequence was, they sent out any thing that had more yellow than the average stock, irrespective of other qualities. Now, mind you, I do not say this is true of *every* queen-breeder who raised these bees; but the tendency on the part of most of them, I fear, was largely so. There are other queen-breeders I might mention, but I believe Mr. Doolittle is among those who are careful and conscientious in breeding these bees. In the *Progressive Bee-keeper* of June 1 he says:

I can not be accused of pushing this yellow craze to the front; but seeing it was coming, I went about breeding the yellow bee up to the standard of perfection as honey-gatherers, to the best of my ability, the same as I had been and am still breeding the three-banders. I have both three and five banded bees in my home apiary, and these and hybrids in my out-apiary, five miles away, but mostly hybrids at the out-apiary. Thus it will be seen that I was in a position to tell which did the best at honey-gathering. With a buckwheat yield, the hybrids would come in ahead; while with a basswood yield, the average would not be greatly in favor of either kind till last year, when, from some reason that is not sufficiently clear to me to decide upon, the five-banders were ahead by some fifteen pounds per colony on an average.

As I have intimated above, I have never claimed any superiority for the five-banded bees; and while I believe there is a great difference in bees, yet I believe that the result in honey is more largely due to management than it is to the race of bees used; and those bees which are the most pliable under the hand of the apiarist's manipulation are the *best* bees, no matter what their color or where they came from. If any queen can not be manipulated or coaxed to give the great bulk of her bees so they will be on the stage of action in the right time to take advantage of the honey-harvest, she should be replaced by something that can. That the five-banded bees, the three-banded-bees of Italian origin, and a good grade of hybrids, can be so manipulated, is why I hold on to them.



FLORIDA TRAVELS.

I told you I was somewhat disappointed to find Manatee only a little village. Well, in going out into the country, unless you happen to go into the neighborhood of some of the nice improved places like friend Bannehr's and others, you would be likely to decide the country was not very much of a place either. I can readily understand how people going to Florida for the first time, especially if they get a little homesick, might declare it was for the most part a barren wilderness of sand and stunted pines; and some of these folks who are not careful about what they say might declare it was a swindle all round. Some years ago a railroad was built from Manatee to Sarasota; but the rusted rails now lie unused, unless it is when they have a picnic or excursion, or something of that sort. There is not travel or business enough to run one train a day, and, if I am correct, not even one a week. We accordingly started out with horse and buggy, to visit friend Corwin, of Sarasota. After we had got out a few miles, however, it began to rain, and we changed our course a little so as to strike Oneco, where the Reasoner Brothers have located their nursery. I could not help thinking on the way that it was a wrong place for a nursery away out in those desert wilds. There were hardly any people, no railroads, not even a well-traveled highway. Imagine my surprise under the circumstances, to find myself abruptly ushered in to beautiful grounds with tropical plants and foliage everywhere. Of course, the recent frost had left its mark; but the Reasoner Brothers have learned by experience that it pays to have some protection, even in Florida. They have several greenhouses covered with cloth, and steam-pipes going about in almost every direction in case the cloth is not quite sufficient. They issue a catalog of over 60 pages; and some of their rare and valuable plants are worth large sums of money. It does not pay, they have found, to take risks with such things. Just before the December freeze they had been putting in a boiler, and had got up a good many of the pipes. When admonished of the danger, all hands were set at work; and by doing their best, toward midnight they got the apparatus in shape so they could get a fire under the boiler. Not an hour too soon was the steam sent coursing through the lengths of iron pipe. Only those who have been in similar trying circumstances can imagine what a breath of relief they drew when their apartments began to warm up in spite of the frosty wind outside. Several hours were passed very pleasantly and profitably to myself in looking over the wonderful plants and fruit-bearing trees and shrubs. For the first time I here got a taste of that queer little orange, kumquat (*Citrus Japonica*). They are oval in shape, and a little larger than a gooseberry. You can eat them peel and all, just as you would a gooseberry or cherry, and yet it is really a most beautiful and delicious little orange. Trees five feet high have given a yield of over 2000 fruits. Last season in Jacksonville they were so very much called for that commission men advertised to pay a large price for all that could be furnished. The lime-tree produces a little lemon, but it makes more delicious lemonade than any lemon ever produced, in my opinion. The giant bamboo was also seen here, but it had been killed by the frost. I shall have

more of this later on. The display of pines, palms, palmettoes, and sago-palms, etc., was just wonderful. We nowhere found such an assortment of cacti in Florida as we saw in Arizona and California, but some of them were very beautiful at the Reasoner brothers' nursery. Of course, we had much to talk about in the way of plants and machinery for irrigation as well as for preserving the requisite temperature for tropical shrubbery. Finally we took a look at the private residence of Reasoner Brothers, nestled down and almost concealed beneath the beautiful forms of trees and shrubbery. Notwithstanding the thousands of dollars' worth that was saved by their steam-pipes and cloth-covered greenhouses, their losses were quite heavy in valuable plants that could not well be protected. Florida, left to itself, presents many features that are rather discouraging; but under the influence of care and cultivation, no one seems to know as yet what Florida may not do. More of this anon.

Before leaving the establishment we looked into a room kept warm and damp, made especially for propagating from slips. For this purpose a certain amount of heat and moisture must be maintained with very little variation. But the skillful florist, with the right sort of bed, will take not only slips from a growing plant, but even a leaf, or *piece* of a leaf, and make it put out roots, and grow. Now, the Reasoners make use of this propagating-bed to bring to life plants that seem determined to die. Sometimes valuable plants are shipped in from long distances, that would be entirely useless without the reviving influences of this propagating-bed and a skilled man to manipulate it.

On the trip from St. Petersburg to Manatee, I noticed, when rounding the point near Palma Sola, a child dextrously managing a little canoe. The winds and waves were boisterous, and I, with the rest of the passengers, was looking anxiously toward the child in the skiff, as it seemed to be. We were a little surprised to see the skiff make straight for the steamer; and as it came nearer we saw it was a little girl in the boat; and, without deigning to notice the rough waves or the wind, she pulled her little craft right up beside the steamer, which slackened up and caught hold of her little boat long enough to give her the mail and take hers in return, for she proved to be, in fact,

ANOTHER GIRL POSTMISTRESS.

Before starting out again, however, we noticed she picked up a lot of fish, evidently just caught, and piled up a heaping pailful, which the mate of the steamer drew up, throwing her some silver coins in return. I was almost ready to protest against letting a child take such risks. But when she picked up her oars and showed herself more at home in a boat than I am on my wheel, I ceased being anxious. One of the passengers explained that she received quite a little salary for acting as postmistress, and fetching the mail from the daily steamer; and besides this she caught fish enough to supply the dining-room on our boat, both sources of income being sufficient to supply the needs of a widowed mother, and perhaps lay up something for a rainy day, or for her own education.

I believe I was snubbed only once during all my trip in Florida, and this once it was my own fault, or, perhaps, the result of my own carelessness. In fact, when I look back and think of it I feel a little surprised that I received such unvarying courtesy from man, woman, and child, even including railroad officials, everywhere and at every turn. But now for this one exception. On my return trip from Manatee I was glad to get another glimpse of the little girl who managed the boat with such

wonderful grace and skill. This time the waves were still higher, and it seemed as if she were really in danger as she threw up her bag of mail, caught the other in return, and pitched her fish into the pail that was let down to receive them. She evidently seemed to think she had better finish business as speedily as possible and get hold of her oars. When a bicyclist gets even one foot on his pedal he is master of the situation; and it is so with a boatman, only he wants to get his hands on the oars, to be able to defy the winds and waves that seem ready to work his destruction. Our little post-mistress made things fly right lively. She tossed the money into the bottom of the boat, catching with the other hand her hat, which the wind seemed determined to take away, then grasped an oar, settled herself back, and, when the wild winds made sport with her brown curly hair, she by sheer strength and skill made her boat spring almost as if it were a thing of life, and had wings. I was thinking about making mention of her wonderful ability, here in these pages, and inquired of the passengers how old she was. No one could tell. I did not dare disturb her with questions until she had her boat well under control, and then I ventured:

"Please, sis, how old are you?"

As the boat prepared to shoot off across the foamy crest of the waves, she threw her head back, looked in the direction whence the inquiry came, and for one brief moment I caught a full glance of her dark lustrous eyes. She wore a jaunty sailors' cap; and for convenience (probably more than any other reason) the sleeves of her dress were such as to show her beautifully rounded arms that handled the oars with such strength and skill. Her complexion was, of course, brown, from the sun and wind, and there was not a bit of paint used to make her whiter than God had seen fit. Oh, yes! I have quite an eye for feminine beauty, even if I am toward sixty; but, dear friends, there never was a *painted* woman, old or young, who could, in my estimation, approach this girl, grown up, as it were, with the winds and waves. Before she opened her mouth to make a reply I saw that for once in the world I had blundered. I called her "sis," thinking she was perhaps twelve or maybe a little more. Instead of a "sis" she was a miss of sixteen or perhaps eighteen. She looked me full in the face, with a saucy twinkle in her dark eyes, and with a little bit, perhaps, of natural pride (and, by the way, she has about as much to be proud of as any woman I know of), she replied—well, what do you think she did say, any way? Only this:

"It isn't any of your *business*, sir, how old I am."

It was now my turn to feel hurt, and I colored up a little. But as she disappeared—or, perhaps I should say, as the distance between us widened—she vouchsafed to me a bewitching smile that allayed any slight wound I may have felt in the words she used. The smile said to me, "Oh! you need not feel hurt, my good friend; I feel pleasant and neighborly toward you all the same, even if I do not choose just now to tell you that I am not quite so much of a little girl, after all, as some people think."

The passengers bantered me some, good-naturedly, and one of them told me that he felt sure she had no thought of being uncourteous. She naturally attracted considerable attention, and was used to banter with the passengers, and had gradually fallen into a way of being perhaps a trifle saucy, or into a way of speaking that might appear so. May God be praised that women are at this stage and *age* of the world making themselves useful and independent in honest and praiseworthy callings, even

if their calling does sometimes bring them not only out into the open air, before the curious gaze of mankind; and may God help mankind at large to regard all such women as they would their own sisters and their own daughters; and may we rejoice that it is our privilege to stand before them to protect them, and to *defend* them, if need be, from every thing that is evil or unholy.

My next visit was at Thonototassa. Unless you have had a little practice in pronouncing this name you will have a good deal of difficulty in speaking it as the Florida people do. But our good friend Mrs. W. H. Stacey helped me to learn it by suggesting that I pronounce the first two syllables—*tho no*—as one syllable; then pronounce the rest of the word as it is spelled, and then you have it—*Th'no-to-tas-sa*.

To introduce friend Stacey and his wife I shall have to tell you that, when O. O. Poppleton first spent a winter in Florida, he made his stopping place with these good people. Now, friend P. could not be anywhere very long without talking bees; and he not only *talked* bees, but he *made* a bee-hive, then a honey-extractor, and finally a foot-power buzz saw, without even a carpenter shop or tinshop to aid him; and the very extractor and buzz-saw were shown to me.

The Staceys are great poultry-keepers. Before I had hardly set foot in the dooryard I was charmed by beautiful flocks of White Leghorns. Each flock has its appropriate yard. Before I left I was permitted to assist in gathering the eggs. I have had all my life visions of a model poultry-establishment, with every thing so neat and tidy that it would be an unmixed pleasure to tend the "biddies" and gather the eggs. And here I found my dream almost realized. Mrs. Stacey suggested that, before I said too much about *their* poultry-establishment, I should pay a visit to their neighbor, Rev. J. H. Waddell. When we arrived, the pastor himself was absent; but his good wife very soon enlisted not only my whole attention but my enthusiasm by their beautiful home and their poultry-appliances. Why, the *whole establishment* looked as if it had been swept and dusted that very morning. The nests and the roosts, and every thing pertaining to Mrs. W.'s White Leghorns, was so unique and tidy that I turned to her and inquired whether she had really taught her fowls to wipe their feet on the doormat before they got into the nests. Now, there is *not* a very large amount of money laid out around the Waddell establishment. When I made some inquiries as to how many men they employed, our hostess replied she believed the pastor himself was the only *hired man* they had about the premises at that time. Pretty soon we found him coming along with a cartload of old brush and rubbish that he had been gathering up. Do you know, dear readers, that some people have a knack of keeping things neat and tidy, without paying out any money of any account? Others will keep a lot of help, and even then seem often worried with many cares and anxieties. I am afraid I belong to the latter class.

Now, ever since that pleasant visit I have been afraid that, in writing up this pastor's home away back in the Florida wilderness, I should make too long a story of it; so I am going to stop right here by simply saying that it was the pleasantest home I ever saw, either in California, Arizona, down south, up north, and I will not except even any thing I saw away down east in *Boston*. I have never seen any thing *anywhere* that so satisfied and refreshed my longings for a model home as this one of which I have been telling. Perhaps one secret of it is, the clean white sand that nature



THE GRAPE-FRUIT TREE THAT BORE \$90 WORTH OF FRUIT IN A SINGLE SEASON.

has spread so lavishly around this little home. But beautiful shrubs, plants, and grassy lawns were to be seen almost everywhere. And then a little gem of a drive went down through the wild tangled woods, and led along by a tiny lake, where the wavelets of pure crystal water rippled up against the soft clean sandy beach.

Two or three times I have been inclined to say that, so far as producing great crops is concerned, Florida is a way behind the North; and I have heard others say that, without vast quantities of manure or expensive fertilizer, you can not raise a thing. Now, wait a bit. Friend Stacey pointed to a large grape-fruit tree standing at one corner of the porch, and incidentally remarked that he received \$90 for one single crop from that tree. I sprang to my feet in surprise. Said I:

"Now, friend Stacey, I have been greatly puzzled about this matter of fertilizing orange-trees, grape-fruit, limes, etc. What fertilizer, and how much, did you put around this tree?"

"Didn't put a bit of fertilizer of any kind around it, neither that year nor any other year."

"But, my dear friend, you certainly did give it some extra cultivation of some kind."

"Didn't give it any sort of cultivation, neither that year nor any other year. It just stood there and grew itself."

I walked around the tree, looked it over, asked how old it was, etc. Now, friends, when you hear people talk about Florida soil, and that there won't any thing grow down there, and that you can't get any money for your crop, just remember what I have told you, and take a look at the preceding picture.

Please remember, also, there were not any freights nor commissions to be taken out of the \$90. Our friend got the \$90 in cash for the fruit, right in his own dooryard. There is a part of this conversation that I once decided I would not tell anybody; but since several have complained about my extravagant stories in regard to Florida, I think I will tell it after all. Friend Stacey said that a neighbor of his got \$150 for the crop of fruit from *one single tree*. You get a few glimpses of the house where our good friends live. Now, right near by friend Stacey's is a cypress swamp, and the most beautiful cypress-trees are now being cut and taken to a sawmill near by. This straight fine cypress lumber is the kind used for greenhouse timbers, you know—rafters, etc. Well, friend S. actually "whittled out" his dwellinghouse from this cypress timber. He split out the boards and the shingles, and built a pretty home before sawmills were ever brought into that region. He is also quite a gardener. He is testing lathyrus and many of the other new plants. Almost everywhere in Florida they say they can not raise peas; but friend Stacey tells me he had a fine crop of Alaska peas, and they were picked before Christmas. The principal fertilizers used in his vicinity are cotton-seed meal and sulphate of potash. This was all that was needed to get crops of almost every thing in that locality. Of course, they are bee-keepers, but the locality has not ever given any very great crops of honey.

A Northerner is often greatly puzzled, and sometimes smiles right out loud, at the queer names and expressions used in Florida. For instance, a piece of light-wood means a blackened knot of pitch pine, almost as heavy as cast iron. A beautiful plump-looking bird is called a "poor Joe;" and the live-oaks that flourish in Florida are about the same as those I have several times described in California. Now you can understand the following which Florida folks sometimes repeat, to the perplexity of their northern visitors: "You take a chunk of heavy light-wood and throw it at a

fat poor Joe sitting on the limb of a dead live-oak." This is almost as bad as the expression, "Blackberries are always green when they are red."

Friend Stacey and his wife have some wonderful collections of minerals. In the vicinity of Tampa, along the shores of Tampa Bay, they find queer minerals called geodes, and chalcedony. The geode is a peculiar flinty quartz-like stone that is hollow inside, and filled with water. The crystallization, both on the outside and inside, reminds one of beautiful frostwork. How did the hollow come inside of the flinty stone? and, finally, how did this hollow come to be partially filled with water? The quartz is so transparent that, by holding it up to the light, you can see the water and the bubble of air that partly fills the cavity.



Thou shalt not covet.—Ex. 20 : 17.

On page 416, May 15, I spoke of a shell mound near friend King's. As we approached the excavation made by the railroad company in digging out the shells, friend K. was explaining to me that the excavating and throwing the shells on to the cars was generally all done by colored men. As we neared the scene of operations we noticed the men were not at work. Friend King asked a colored man the reason, and he replied that "yesterday was pay-day." After he was out of hearing I inquired why they could not work, even if yesterday was pay-day. The answer was:

"Why, after these people get their pay they will not work any more until they get rid of their money. In a few minutes we shall probably see the sad way in which they manage to get relieved of their funds before they can go to work again."

Right there was being enacted the sad scene right before our eyes. A sort of table or work-bench was placed in the shade of a tree. The men were all gathered around it; and so intent were they on their gambling that they hardly noticed that strangers were looking on at all. There was one rude hut or building in the camp, and a forlorn-looking woman was there to cook and prepare their meals.

"But how long does this gambling last, friend King? I suppose the dull ones, of course, in the game, or perhaps the most conscientious of the lot, will lose their money first, and drop out. In this way the circle draws down narrower and narrower until there are finally only two contestants, and in the end *one man*, the worst *villain* in the lot, probably, pockets all the money the rest have earned during the days and weeks that are past."

My companion turned around and looked at me, perhaps in a little surprise that I should know how these people managed when I was so little acquainted with them. I went on:

"But doesn't the final ending-up of the game result in quarrels and fights?"

"That is just the way it does end, Mr. Root; and the one who gets the money from all the rest has to run off, a good many times, to escape their anger. Of course, there is more or less cheating and sharp practicing, as there always is in this work, and bloodshed is not unusual at the winding-up."

Now, dear reader, this kind of work goes on and on in this land of ours so full of Sunday-

schools and churches. I could not discover that any minister, missionary, or pastor, either black or white, was making any protest against it. The railroad company probably did not interfere so long as the darkies kept the cars loaded as fast as they were wanted. If they spent so much time in gambling they could not do this, then I suppose more men or different men were put on. These colored laborers were mostly without families. They were a sort of adventurous, irresponsible set. Some of them were accustomed to change their locality as soon as they got into some trouble; and the vast extent of wilderness and swamps all about them made it an easy matter to evade the law.

Not long before, one of this same class of fellows shot a white man in a quarrel. He ran for the woods, but nobody put after him; and the locality was so far from towns or cities that it was almost out of the question to think of sending an officer of the law after him. Now, I do not mean to say that nothing is being done in Florida for the colored people. Again and again I was obliged to admire, reverence, and respect the efforts that are being made for the education and Christianizing of the race. Several times I walked through a part of different towns and cities allotted to the colored people. I saw the mothers and children. I saw the colored pastors making their calls, taking down the names of the people, number of children, ages, etc., and asking what church they attended. I believe these colored pastors are, for the most part, good men; and while I felt sad to see these men spending their money in gambling, I could not but reflect that they were by no means the only transgressors in breaking that last and important commandment. Let us look at it. These men worked side by side day after day, through the hot sun, and most of them did good honest day's work. One would suppose they might have a kindly feeling, one toward another; and that each one might feel happy, when payday came, in seeing his comrade get the reward of his toil. What sort of disposition or heart must a man have when he would voluntarily appropriate the wages of a fellow-workman? If he took it while this brother was asleep, it would be robbery. I do not know just what the laws of our land are in regard to gambling; but I do know that laws have been framed, time and again, in the endeavor to put it down. We respect in theory if not in practice the command, "Thou shalt not covet thy neighbor's house," etc. Is it not a fact that almost all the wrong-doing and wickedness in this world come about because men covet that which does not belong to them? Why, how can any man, woman, or child deliberately plan to appropriate that for which a neighbor or companion has worked hard? Why should we not have as much interest in seeing that our neighbor has his just rights as that we have our own rights and just dues? Well, it is because we are imperfect and sinful. It is because of the inborn depravity of humanity. I say *we*, because I am every day and almost every hour conscious that this sin of covetousness lurks in my own heart as well as in the hearts of others. I have worked and prayed industriously for years and years, and yet I am selfish still. God have mercy on *me* a sinner! In one sense, however, I am not covetous. I despise and abhor the man who would take from his neighbor without just and fair equivalent. I loathe and abhor the sight of a pack of cards, just because they have been the recognized tools of this kind of genteel highway robbery for ages and ages past. A certain class of people seem to be continually striving to make card-playing respectable. They bring it into

their homes, and they engage in games of cards with their own children. Sometimes they succeed, *apparently*, in proving that this terrible work is harmless and innocent. A man well to do once put a billiard-table in his barn, and told his boys that, when they wished to play billiards, to play at home. "Don't go off to doggeries; don't go in company with the evil and vicious. Play at home." Somebody, in telling of the above, claimed that the father had succeeded. His boys played billiards in the barn, and grew up to be straight, square men.

"Hold on, my friend," remarked a bystander. "May be what you have just said is all true—at least, we will let it pass for truth just now. But I happen to know a neighbor's boy—a child of Christian parents—one who started in church and Sunday-school, and who, I verily believe, might have been a good man this day had it not been for that billiard-table in the neighbor's barn. The boy started *there*. He started there because it was made respectable. He got his taste for gambling *then* and *there*; but now he is nearing a gambler's and a drunkard's grave. That billiard-table in the neighbor's barn spoiled him for every thing good and useful."

We pity, censure, and despise the poor colored laborers who have lost their money in gambling year after year as fast as they can earn it. But, dear friends, is it not true that they are only a little more bold and reckless in their manner of transgressing and breaking this tenth commandment?

The daily papers of this whole land of ours are just now teeming with accounts of hundreds and thousands that have been stolen on the sly. A good deal of the time the money is taken from the government by some sharp management. Men get into office by bribery, and then they seem to think it is expected as a matter of course they will get their money back that they have expended, by some hook or crook. Officers of the law agree to let offenders go on in their transgression providing they *pay* them enough, etc. Are there no people left who do not want and can not be hired to touch that which justly belongs to some fellow-man? or that which justly belongs to the United States and our public institutions? Oh, yes! there are a good many people; but there are so many things to be seen to and looked after, with all the machinery and multiplication of modern industries, that good people have not time to look after every thing; and a good many of them have such a dislike for going down into the filth and wickedness to straighten things up that they leave it for somebody else to do. Here and there a wicked man is converted to Christ Jesus, and loves his Savior more than he loves any thing Satan has to offer. Even should the prince of darkness say, "Here, I will give you the *whole world* if you will fall down and worship me," we have instances of men who stand firm and steadfast all their lives, who never yield to Satan one inch;* but as

* Yes, I have met quite a good many men who value a clear conscience, as they go to bed at night, more than they value the money they may have received during the day. Why, a good many times people have come to me, saying, "Mr. Root, you paid me a little more than you ought, in that deal yesterday."

When I look up and laugh at them (I always feel like laughing in real good nature and joy when that unselfish feature of humanity comes out), and tell them I guess it is all right as it is, sometimes they will say, "Well, did you get rid of the stuff so as to come out whole?"

If I hesitate a little, down goes the hand of my neighbor into his pocket, and out comes a handful of silver.

time goes on it seems almost as if the dens of wickedness furnish *bad* men faster than all the churches and missionaries can furnish *good* men; and the saints are, to use a slang phrase, "snowed under." But they need not be. God's promises are to the effect that one who is consistent and faithful shall be more than a match for a hundred of the vicious and covetous.

But you will notice that this text of ours does not end up by saying, "Thou shalt not covet thy neighbor's money." It does not say any thing about money. It commences by saying you shall not want his house. It is a sin to be envious because your neighbor has a better house than you have. And then after mentioning the house it speaks next of the neighbor's wife. I can remember that it used to seem singular and strange that this enumeration should come in just this order. But Satan knows his business. He knows that many a man might stand firm and immovable so long as money or property only was concerned. The man who wrongs his neighbor out of money, or even out of his house and home, can, if he repents, give back the money with interest. He can give back his house and home, or a better one; but one who steals from his neighbor the wife and mother, can never restore that home as it was before. He has not only taken the path that leads down to hell, as the scriptures tell us, but he has led another human being down to hell along with him. And who shall tell of the wreck and ruin that follow on for generation after generation?

It is a terrible thing to want any thing that belongs to your neighbor—of course, I mean in the sense of wanting it without giving for it any proper equivalent; and it is the sin and shame of our nation to-day that our children are permitted to grow up without more careful training in regard to this one matter of respecting the rights of others. If everybody loved and enjoyed the privilege of sacredly and solemnly living up to this tenth commandment this world of ours would be a heaven here below. But, on the other hand, if mankind continue to grow up, not only wanting but greedily appropriating all they can get hold of, it will make this world of ours—nay, to come nearer home, this United States of America—a veritable hell on earth. If we continue to look up to men, to respect them, and to treat them with courtesy—men who would, without doubt, do just as the poor darkies are doing down in that shell mound, pocketing the earnings of the *whole crowd* if they can get it—then our nation is surely doomed.

A few days ago, when it was first announced that one of the great political parties of Ohio had nominated a man as candidate for govern-

or, the first comments I heard were disapproval; and the principal reasons for the disapproval were, that the politicians had nominated a *millionaire* for the office. It seemed as if the people of Ohio—at least a considerable part of them—took it for granted we did not want a millionaire. I do not know but they thought a man ought to be *ashamed* of being a millionaire. Why? Well, many good people have got into a way of thinking that a man has no business in being a millionaire—at least, a certain class are taking it for granted that he became a millionaire a good deal in the same way the boss gambler in that crowd of darkies succeeds in taking the entire earnings of all the rest of the crowd; and I do not know but they think (like this same boss darkey) after he has got it all, to be consistent he should run away and hide himself, or get among a new crowd that does not know any thing about his past record. I hope you know, dear friends, I do not wish to find fault with honest industry; neither do I wish to complain of those who seem to have ability to manage great numbers of men and hundreds and thousands of dollars, and also to manage large capital. But I am *hungering and thirsting and praying* that our nation of people, before they go a step further, may stop and consider this last commandment; that they may, on bended knee, ask God to take away all disposition or longing for their neighbor's house, or his wife, his maid-servant, his ox, his ass, or any thing that *belongs* to the neighbor.



A VISIT TO MATTHEW CRAWFORD'S.

During one of those exceedingly hot days that ushered in this month (in fact, it was on the very first day of the month) I took a notion to pay a visit to Matthew Crawford, the strawberry-grower. I knew it was a very hot day for a wheel-ride. Hot days have never very seriously interfered with my enjoyment on the wheel so far, and I thought I would take the chances. During the fore part of the route I enjoyed it as usual; but I stopped and sat down and rested by the numerous soft-water springs along the way, and sometimes stretched myself out full length on the green grass in the shade of the beautiful trees. But before the 20 miles were up I had become pretty tired. On the very summit of one of the great hills near Northampton, Summit Co., I sat down in a pretty dooryard to rest. Looking up I was surprised to see red (the red kind, you know) cherries, black cherries, plums, peaches, and almost all kinds of fruit, apparently unharmed by frost. This was clearly the result of the elevation. The cold air could run down on all sides into the valleys, away down below, and this gave that fruit-orchard on the hill almost perfect protection from the ravages of the frost. Here is a hint to owners of hilltops. And what is more beautiful than to see the summit of these great mounds made by nature covered with fruit-trees, and loaded with fruit, when the valleys and plains are destitute on account of the frost?

The day before I took my trip, Ernest took hold of the chain of my wheel and said, "Father, look here: you had better take that wheel right in to Henry now, and have him take up the slack in that chain. If you neglect it, the chain will be thrown off in going down

"Look here, Mr. Root, we know you are generous and liberal; but we don't want to take advantage of your good nature. Let me pay you back enough so you will come out whole in the transaction, any way."

How much good it does me to meet a man like that! We say to ourselves, "Well, there is one man at least that we can remember never needs watching." Pretty soon we find another, then another; and by and by we discover there is quite a little band of honest, unselfish neighbors around us—people who will not overreach and take more than their share, no matter how good a chance may fall in their way. We can leave our tools and produce out in the fields in such a neighborhood. We need not waste our time in fussing with padlocks on the tool-house, poultry-house, and granary, for such a spirit in the hearts of mankind is more secure and lasting than all the padlocks and iron safes that were ever devised by the art of man. While I write, it seems to me that somebody, years ago, said what I am trying to say, better than I can ever say it myself. "Behold, how good and how pleasant it is for brethren to dwell together in unity!"—PSALM 133:1.

a hill, and you may find yourself in a worse predicament than you have ever yet been in all your wheeling adventures."

Now, I intended to do exactly as Ernest suggested, but it was overlooked. In going down a hill near Ghent—sure enough, off went the chain. At first I felt a good deal distressed to find the cranks of my wheel turn loose, and give me no control whatever over its motions or speed. The chain, however, seemed to keep out of the machinery until I almost touched the bottom, then it caught; but as it was soft sand, the rear wheel slid like a sled-runner until the machine slackened up so I could get off. I felt like calling myself a good many names for my stupidity and neglect. I hunted a shady place, then began feeling in my pockets for my wrench. The pump and oil-can were all right, but "nary a wrench." I rarely carry my tool-bag, because I try to dispense with every ounce in weight, especially during a very hot day. Then I remembered laying the wrench down on the window-sill at the factory, 15 miles away. I put the chain back in its place, however, and concluded it would probably go all right if I walked down steep hills. I went down several hills of moderate decline, and every thing seemed to be safe and sound until I ventured on one that I felt on the start was a little bit risky. When half way down, off went the chain again. With no back pedaling, of course the wheel began to go faster and faster. I dodged innumerable rocks, set my teeth, and held the handle-bars with a grip of iron. All this time the chain was clattering; but finally it caught in the sprocket-wheel, and there was a zip, and a rattling of steel, then I heard the chain fall to the ground. It was broken. It made me think of a fractious colt that had succeeded in kicking loose from sulky, whiffletree, and even the traces. I felt like yelling to somebody to "stop us." But there was no one in sight. My 18-lb. Rambler seemed to be a "rambler" indeed; and even when it got on level ground it would not stop. It went up another hill and down on the other side. I began to think of Darius Green and his flying-machine. Finally the wheel gradually slackened up, and I got off. I had been thinking that morning that I needed a good sweat; and I got it that time. It was not the sweat of physical exertion, however, as much as it was *mental anxiety*; and then I found I should have to walk the rest of the way during that terribly hot sultry noontime. I could not ride up hill without a chain; and I could not ride down hill—at least if it was very *much* down—because I was afraid. But I did sail along nicely down all gentle inclines, and even on a rather level road; and with a brisk wind behind me I made pretty fair speed. At one point I came down a long gradual hill. At the bottom was a bridge, but the way was blocked by a peddler's wagon and a farmer. As I could not slow up I yelled at them all the way down hill to "clear the track." They evidently, however, could not see any reason why I should not slack up. But when I got near to them I explained to them that my wheel was broken, and that I had no control over it. Doubtless it seemed to them a little strange that I should be coming up hill at such speed as that without doing any pedaling. They moved, however, just in time to let me squeeze between the two vehicles by the pretty sharp guiding of my steed.

Beyond the hill I found a blacksmith shop, and we two—the blacksmith and I—managed to mend the Rambler chain by taking out one link. He was a little slow on deciding just what price he ought to charge. Finally he said he guessed the use of his tools and his time might be worth a *dime*. I gave him a quarter,

and thanked him besides, and went away with the pleasant reflection that there were at least a *few* people in this world who do not want all they can get in every little deal. Yes, I was cheered by another pleasant reflection too: An 18-lb. Rambler wheel, without any chain or crank, would help me quite a little on my journey. But after you have ridden a mile or two without them, then you can realize as never before what a *superb* luxury it is to make the little light machine fly up hill and down, either slow or fast as you choose.

Friend Crawford was fixing a posy-bed in the shade of a tree, for Mrs. C. He is just about my age, and he said he had lately been deciding that he wanted to take life a little easier than he had been doing during the years past. I told him that was my sentiment exactly. Then we went out where three bright muscular young men were taking care of the strawberries. Two of them were his sons. My eyes soon caught a glimpse of the new Zephaniah Breed weeder. With this machine one of the boys had actually gone over two acres of strawberries newly set, fined up the earth in the most beautiful manner, and had not, so far as I could see, torn up a single plant. Why, if a couple of men with cultivators and hoes—yes, and rakes too—had worked two or three days on that two acres of strawberries they could not have fixed them any better than young Crawford did in perhaps two hours. And then the boys had got hold of some new-fashioned hoes which I greatly admired. You can make one by taking a common hoe and cutting off a portion of the steel in a line from one of the corners back toward the shank. It leaves an acute angle of steel at the corner that will go in between the plants, and mellow up the soil, or yank out a little weed. The hoe is just as good for all ordinary purposes as ever, has a sharp corner like a trowel, to get in where a common hoe could not. The frost had spoiled the greater part of their crop of berries; but they are going ahead with new plantations all the same.

RA'B RUNNERLESS STRAWBERRY

attracted my attention. The plant just keeps growing in great clumps or crowns; and if you make the ground rich enough, and have the plants far enough apart, you can, no doubt, get a quart or two from each plant. To get new settings you dig up the old plant and divide it up. I saw a row of nine young ones just made by splitting up one old plant. Another thing, you can put your strawberries of this variety in rows so as to cultivate both ways. I think this variety has never yet been offered for sale.

Friend Crawford finds it quite convenient to combine onions and strawberries. I don't mean that he mixes them up on the table, but just in growing them out in the fields; and, strange to tell, he has sort o' settled down on White Multipliers and White Top onions, just exactly as I have, and here he is only about 20 miles away, and we were sold out and seeking everywhere, while he was selling his crop for less than half what it was worth because he did not know where to dispose of it. Don't you see, friends, that it pays to be neighborly? Go around and see what others are doing in your line of business, and talk matters over.

THE ONION-MIDGE OF NORTHERN OHIO, OR G NORTHERN THRIP OF THE WEST.

Mr. A. I. Root:—I wish to say that your talks on gardening, etc., are very interesting to me. It was through your note on the onion-midge that I learned what ailed my crop last year. My onions began to die during the drouth early in the season, that I thought were all right. I

could not tell what was the matter with my late planting, for the weather seemed favorable. I looked, and found the onions covered with the midge. I did not make over a third of a crop. In August we planted two patches of winter onions—No. 1 where the spring crop was grown; No. 2, 200 yards from where onions had been grown for several years. Patch No. 1 died nearly to the ground before winter, after they were knee high. Patch No. 2 was injured about half as much as No. 1. I sowed 8 oz. of Pearl seed the last of August; another 8 oz. Sept. 15th, in adjoining beds, 175 yards away from where onions had ever grown. The first lot of plants were killed nearly to the ground before winter, and the others were practically uninjured. A part of each lot were transplanted in December. Three-fourths of the first lot, both transplanted and in the bed, were killed by the winter. The second lot was uninjured. This spring the first lot was the first to be injured by the midge, except some of lot two that were planted beside the winter onions above mentioned, and began to show the effects of their work as early as any. These pests are in the ground in old onion-patches, also in the onions, sets, and buttons. But in the case of the seed-beds, where did they come from?

I sprayed a few onions with kerosene emulsion. That seemed to do some good; but thousands of insects came from the adjoining rows and covered them again. I will try acid on some of my later onions. Our druggist charges 45 cts. per lb. for carbolic acid. I fear that is too expensive to be used extensively. Then I fear the applications will have to be repeated frequently to kill those that come from the ground; or are they all on the plants while they are growing? I wish our experimenters would learn of some cheap effective way to get rid of this pest. It is my opinion that treatment, to be successful, must be preventive. I would suggest working the ground during freezing weather, or planting winter onions about the patch in August, then pulling and burning late in the fall, when they are covered with the insects. If water will destroy the midge, why would it not be a good plan to flood both patch and seed-bed, where possible, just before transplanting? The onion is my best-paying crop, but the midge will destroy three-fourths of it this year. I shall have to abandon the crop entirely if I can not destroy the little fellows.

Malvern, Ark., May 16. P. C. SHOCKEY.

The above was at once forwarded to our Ohio Experiment Station, and below is their reply:

Friend Root:—Our Prof. Webster, who has done considerable work with the insect referred to, refers me to a bulletin recently published by the Iowa Experiment Station, in which Prof. Osborne gives a description of the insect, under the name of the "Western Onion Thrip." It is one of those insects which do not have a particular liking for any special plant, but has been found on squash, turnip, catnip, sweet clover, cucumber, and many other plants. The eggs are laid beneath the surface of the leaf; and as soon as they hatch they begin to feed on the plant-tissue. They evidently grow quite rapidly, and there are, in all probability, a number of generations each year. They live through the winter in both the larval and adult form, and begin to multiply as soon as vegetation is ready for them.

The insect has never yet, except in exceptional cases, been so troublesome but that successful remedies have been found to meet it; but Prof. Osborne thinks that kerosene emulsion should be one of the first things to be tried. This will kill the thrips whenever it hits them; but there will be many that are in between the

leaves that will escape, and, with those hatching out, it would probably take several applications; and as the insect flies quite readily it would probably come from other places. To pull and burn the plants when badly infested would check them; and especially would this be advisable early in the season, when they commence, as they did in the onion-fields of Lodi and Creston, in spots, and gradually spread over the field.

As the onion crop is such a valuable one it will pay to do more than ordinary work in fighting the pest; and the grower who watches closely and carefully for the first appearance of it, and then fights it from the start, will have the best success; but as it is an insect that has so many food-plants, it may be only a condition that forces it to feed upon the onion. It is evident that these insects seek succulent plants, and it may be that only in a dry season will it prove serious to the onion. Bulletin No. 27, of Iowa Experiment Station, contains quite an account of the insect, and can be obtained by sending for it. The address is, Experiment Station, Ames, Iowa. E. C. GREEN.

Wooster, O., May 3.

A visitor at our onion-beds here has just now, June 1, shown me that the midge or thrip has started in on our American Pearl onions. As we are now marketing them, however, they will not be likely to do us serious harm. Should the present drouth continue, however, I greatly fear a repetition of the troubles of last year. We are glad to get the facts given in both the above letters, but regret to know the insect has been doing mischief over localities so widely separated. In the onion-gardens at Creston, Wayne Co., O., they nearly ruined the crop. One of the owners, a Mr. Jordan, told me it was his belief they all wintered over in some old onions left in the ground over winter to produce sets. This agrees, you will notice, with the statement of friend Shockey. We have never found them on our Egyptian or winter onions; but they finish maturing their sets, usually, before the midge gets to be very bad. At the Lodi onion-gardens, a few miles from Creston, it has been for some years their custom to clear off every thing in the shape of vegetable growth from their grounds in the fall, and burn all rubbish. This, the men told me, was to prevent insects, fungoid diseases, etc., from being carried over from one season to another. Friend Shockey, you will notice, also suggests pulling and burning late in the fall. Can some one tell us whether flooding has ever been tried? The most successful celery and onion farms at the present time have arrangements for irrigation that could be modified so as to flood the land in the winter, without very much trouble.

OXYDONOR AND ELECTROPOISE.

BLUNDERERS AND FLUNDERERS.

The following is from the Rev. C. N. Pond, of Oberlin, O., who has been for many years connected with the Ohio Sunday-school Association, and is also recognized as a contributor to several of our religious periodicals. He is also well versed in chemistry and electricity. I have asked him to examine the advertisements and circulars, and give us his opinion. Here is what he says:

Dear Brother Root:—The documents you sent I have carefully looked over; also some directly from the Oxydonor office. The claims made are simply astounding. "Makes you absolute master of disease." "It will make you as absolutely independent of disease as if it did not exist." "It is *per se* more

than paramount to all else man's knowledge affords," etc.

From one of the Oxydonor tracts I conclude that the Electropoise is the same thing, but has passed into other hands, and Oxydonor Victory now fights its former self, "now in the hands and control of the Philistines who propose to make war upon humanity with that name." I mean that the entire matter of all the circulars of both indicates identity, but with a transfer and fight later. One of the publications particularly indicates the change.

The announcements of Electropoise and Oxydonor Victory are not founded upon any known principle of science or health. They lay claim to "natural laws heretofore unknown," and promise to cure almost every disease of afflicted humanity. The circulars and pamphlets bear the stamp of unmitigated charity, as devices to get money from needy sufferers, without rendering the slightest good in return. They do harm, because, though in some instances there is seeming relief, yet the inevitable effect in general must be to burden the afflicted by expense without profit, by raising hopes which can end only in disappointment, and by turning attention from actual methods of cure. Many honest testimonials can be obtained for any device whatsoever, because, from a given number of sufferers there are always some about to recover, and some who need simply to have their minds turned into a new channel of hope. Such was the case with so-called "Christian science," which was neither Christian nor scientific, and is the case with every patent nostrum palmed off upon the public. But as for any actual curative agency in Electropoise or Oxydonor, I should as confidently expect it in a tin whistle or a lucifer match. C. N. POSE.

Oberlin, O., May 29.

We copy the following from the *Rural New-Yorker*:

HEALTH CURRENTS.

Four weeks ago, on page 316, we gave our opinion of the "electropoise" which is being advertised as a great "cure-all." By turning back to that page you will see that this device is a cheap little cylinder of nickel, filled with a mixture of sulphur and graphite, with a long cord connected with a garter. The estimated cost of the thing is under 50 cents, and the price is \$25. The points we tried to make were these: 1. The difference between price and cost is altogether too great. 2. We don't believe the sulphur and the graphite will set up any "action" that is going to do a sick person any permanent good. Our opinion, then, was that a net-egg or a horse-chestnut carried in the pocket would prove just as scientific a cure. Early this week we received this note from the Medical Director of the company handling this device:

A lady brought us in an ab-tract from The R. N.-Y. of May 11, containing an ignorant and annoying attack upon "the electropoise." "The electropoise" is not a fraud, no matter how apparently simple the contents and construction of the polarizer. When the polarizer is placed in cold water, etc., and the plate is applied to the warm surface of the bodies of men or animals, a thermo-electrical current is started, and enters the body. This current has a most remarkable effect upon the circulation, nervous system, and nutrition, thereby effecting unusual and also easy cures in many diseases which can not be reached by the usual methods. I will call upon you.

Agreeably to his promise, this gentleman called, accompanied by the manager of the company—bringing an "electropoise" along with him. They admitted that our statement as to the make-up and cost of the device is correct—it is a 50-cent article sold for \$25.

Now, this is about the way we talked to these men: "Our present opinion is, gentlemen, that this 'electropoise' is a first-class 'far.' You charge for it 50 times what it costs, and you make for it most extravagant claims which the ablest scientific men we know declare to be ridiculous nonsense. At the same time, we are always open to conviction. The R. N.-Y. is too big a paper to permit any bigotry or false prejudice to sway its opinion. While you can't *buy* our opinion for \$1,000.00, if you will give us *proof* that your claims are correct, we will help you place an 'electropoise' in the hands of every sick man in the country."

"That's just what we came to do," said the manager, "and here is your proof in these hundreds of printed testimonials from those who have used the 'poise.'"

"We don't care any thing about your printed testimonials. Admitting that these people *think* this 'poise' helped them, how do they know that it was

not some change of diet, or way of living, that did the business? What we call proof is a scientific demonstration that this 'force' you talk about, actually does cure, and an explanation of the way it cures and how it affects the system."

"We can't explain it. We only know that it does cure. We have a theory about it, however. Will you let us put one on you to illustrate it?"

"Certainly!"

A piece of ice was taken out of the water-tank. The nickel case of the "electropoise" was put on this ice, and the whole wrapped in paper. The garter at the end of the cord was fastened to the writer's wrist to the satisfaction of the medical director, and we all waited for the appearance of the thermo-electrical current. While it was preparing to start, the manager explained the philosophy of this new system of curing. Put in the simplest way possible, this is what we understood him to say:

When put in cold water, the sulphur and graphite in the cylinder start up some sort of chemical action, which is communicated by means of the cord and garter into the system of the person connected with the 'poise.' Whether this "charge" is ordinary electricity or not, nobody seems to know. After entering the system, it very conveniently goes to the spinal cord, and thence through the nerves all over the body, quickening all the processes of digestion and assimilation, and thus (of course) curing disease by mending all the broken-down parts of the body and causing all the organs to do perfect work in nourishing and taking off wastes. Somehow or other, all these wise men of the age have skipped this great principle heretofore, and most of the scientists now on earth are so nervous and afraid that this 'thermo-electrical current' will absolutely ruin the business of doctors, druggists, and undertakers, that they will persist in calling the "electropoise" a humbug, just as they did the electric brushes and other fads which flourished so 15 years ago, and have long since died out!

All this time I was waiting for that current to start. To cheer me along, the manager said that the current could cure catarrh, deafness, old sores of many years' standing, bony growth at the joints, that it would prevent consumption in its early stages, relieve dyspepsia or nervous prostration, and that it will make seeds and plants grow faster! Now, I am deaf, and have had catarrh; my fingers have been frozen, I have five bad scars on my hands; there is more or less malaria near where I live; I am always afraid that the baby will get hold of some tuberculous milk and drink it; I am sure to have a headache when I eat too much dinner; I am threatened with nervous prostration when I see how "Preservalline" and the "Creamery Shark" are permitted to advertise, and my lima beans simply *won't* start this year. Therefore, you can imagine that I was mighty anxious for that "current" to start and put an end to these various troubles. But it didn't! I felt no effect whatever, and at last they took it off—putting me down, I fear, as a very tough subject. To tell the truth, I *did* expect to feel something like a mild shock of electricity, as I have no doubt something of that sort *could* be generated in this way. I simply did not feel it. We have now put the "electropoise" in the hands of one who has been an invalid for many years. He will give it a fair trial, and we shall all know the results. Needless to say, we have no faith in it whatever. Possibly we were wrong in saying that it is no better than a dried horse-chestnut, for undoubtedly there may be generated some slight chemical action. That this "current" will act all through the body, as these people claim, we do not believe, any more than we believe that skunk's oil will cure deafness because the skunk has a very acute sense of hearing. We have tried that remedy too.

But stop! Hold on now! We don't want you to go away thinking that we are down on all new things and influences that we can't fully explain! Not at all. We have had quite a little experience with a "thermo-mental current," and we have no objection to having every reader test it. To test it thoroughly, you must send The R. N.-Y. for at least one year into some family that does not now read a first-class agricultural paper. At this end of the line, we guarantee to make things sulphurous for all the rogues. In place of using graphite, we will make a great fight for the farmers' rights and try to put cool water on the hot-heads. The result of this combination will be a "thermo-mental current" of improvement which follows the mail right into that family, and works all through it, starting all the members up to better ideas of farming and living.

I may remark that the "Medical Director" alluded to in the above has seen fit to send me a very kind (?) letter; and he tries again to explain how it is that Electropoise acts. He admits they get \$25.00 for a 50-cent article, and says the scientific explanation of Electropoise is, that it acts in the same way as putting cold applications to the spine; but instead of applying the ice to the spinal column the polarizer is placed on a block of ice, and the "cold" runs along the wire to the wrist or ankle, and then to the spinal column. This explanation is quite ingenious indeed. But, unfortunately, science has never yet discovered a sort of cold or heat either that could run along a wire; then he modifies it by suggesting that it is "thermo-electric vital force" that goes along the wire. No scientist of the present day recognizes any such force, I hardly need remark; and yet these fellows keep right on robbing sick people.



CARLOAD SHIPMENTS.

Since last report we have loaded and shipped a fourth car to Barteldes & Co., Denver, Colo. We are loading a second car for G. G. Wickson & Co., San Francisco, and have export orders sufficient to make a fourth car for New York city.

A MILLION FEET OF PINE LUMBER.

During the last month we have bought, or contracted for, a round million feet of dry pine lumber for use in making hives, frames, boxes, etc. We have also contracted to furnish 10 or 12 cars of lumber cut for boxes for shipping celery, most of it grown in this county. We have for some time been cutting up pine lumber at the rate of over two cars a week.

MASON FRUIT-JARS.

We have a pretty good stock of Mason fruit-jars, bought before price advanced, which we will sell, while they last, as follows:

1 pint, 1 doz. in box,	6 doz. in box,	\$3 50
1 quart, " " "	7 c; 8 " "	5.00
1/2 gallon, " " "	85c; 6 " "	4.75

These are best jars, made with natural gas.

NORTHWEST TRADE INCREASING.

From the settlement for the month of May with H. G. Acklin, St. Paul, Minn., our Northwestern representative, we note with much satisfaction a decided increase in the trade in our goods for that territory. The amount sold during the one month was more than for the entire year of 1893, and nearly as much as last year's entire trade. This indicates either that the prospects for bee-keepers in that section are much better, or that they appreciate Root's goods and the convenience of being able to get them near home at catalog prices on short notice, as well as the service of our agent there. Doubtless both considerations help to swell the trade.

HONEY-PACKAGES OF ALL KINDS.

We have already furnished this season a great many thousand shipping-cases of various sizes, and several hundred boxes of glass to use with them. We are ready to supply thousands more in large or small quantities, as needed. Our cases are light, strong, neat, and well made. They include nails, and, if ordered complete, will include glass and paper to go under and over the sections in each case.

For shipping extracted honey the 60-lb. square cans can not be surpassed. After July 1st, in all the territory covered by the Western Classification, i. e., west of Chicago and Mississippi River, extracted honey in barrels, kegs, or cans boxed, will go at 4th class rate of freight. We are prepared to furnish 60-lb. cans, with 1 1/2-inch screw caps, from New Orleans, La., St. Louis, Mo., Conneaut, O., or from here. Price of a single box of 2 cans, 75c; 10 boxes,

\$6 50; 25 boxes, \$15.00. Special prices quoted on large lots and carloads. One gallon or 12-lb. square cans, with screw caps, \$10.00 per 100; or put up, 10 in a box, at \$1 40 for one box; \$13.00 for 10 boxes; 25 boxes, \$30. We have a good assortment of glass packages for retailing honey in. See our catalog.

WHITE BEANS.

I believe these always bring cash as surely as wheat and corn; and the prices have never been away down, like wheat and corn—that is, to my knowledge. The beauty of them is, they do better when planted, say the last of June, than at any other time (less liable to be buggy); and we usually have ground that can be cleared off about this time. The hurry of planting is mostly over, so we can put them in in good shape. We have never found any thing better than the York State Marrow and the White Kidney. We can furnish either at 15 cts. per quart; peck, \$1.00; bushel, \$3.50. If wanted by mail, add 15 cts. per quart for postage.

CRIMSON CLOVER.

We copy the following from a circular just received from Baltimore:

"It can be sown from June to October 20th; the earlier, the more pasture it will make. It germinates quickly, grows very rapidly through the fall and winter, blossoms in this latitude about May 1st, and is ready for hay about the second week in May, and matures seed from the first growth about first week in June. It can be sown after other crops are removed from the ground, such as wheat (when clover has failed to catch), oats, millet, or on any vacant ground. It is a very rank grower, some stools containing as many as 120 to 140 blossoms from one seed.

"It will grow and make a heavy crop of hay or seed on land so poor that the common clover would not make a stand; and if cut when in full bloom it will make the most nutritious hay known; or if turned under it will prove a most productive phosphate, increasing largely any crop that follows. We believe great profit would result to the farmer by sowing buckwheat and crimson clover at the same time. He could thus get two more crops a year than are usually grown. The buckwheat nurtures the tender clover-plant, and shields it from the summer suns; and when it is taken off in the fall it leaves the clover healthy and strong to make its growth."

The principal point in the above is for bee-keepers. On the same ground you can get a crop of buckwheat and a crop of crimson clover, both honey-plants. From what experience I have had with both, I have not a particle of doubt but that it will succeed. I intend to make a sowing of several acres myself. From 8 to 15 lbs. of the crimson-clover seed are needed per acre, and we are prepared to furnish it at the following very low figures: Two-bushel sack, \$7.00; per bushel, \$3 60; half-bushel, \$1.90; peck, \$1.00; pound, 10 cts. If wanted by mail, add 10 cts. per lb. extra for postage and packing. We will send 3 lbs. by mail, postpaid, for 50 cts. Every bee-keeper should try a little patch of it in his garden, even if he does not do any thing more. The spring and winter just past have, perhaps, been as unfavorable for this plant as any one for years past; and yet the reports, even as far north as we are, are sufficiently favorable to warrant at least a further test. Of course, it is not to be expected that all who sow it will get as great results as are claimed for it in many of the circulars sent out.

The *Practical Farmer*, of Philadelphia, for June 15, is devoted almost entirely to reports of crimson clover, and instructions in regard to its management. We think it will pay any one who is interested in the matter, and has had little or no experience, to send for this as a sample number. Address *Practical Farmer*, Philadelphia, Pa.

Did you ever! My Hubbard squashes now, June 13, have leaves as large as my two hands, and yet not a bug, worm, or insect of any sort has even so much as looked in the direction of that squash-patch, evidently. I have been watching them every night and morning, ready for the fight; but it looks now as if I should not have any fight at all.

LEATHER-COLORED QUEENS, 40 CTS. EACH,
or \$4.00 per dozen, June or after. Money-order office, Royalton. A. T. MCKIBBEN,
Morrill, Morrison Co., Minn.